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# NASCOM NETWORK

## GROUND COMMUNICATIONS

### RELIABILITY REPORT

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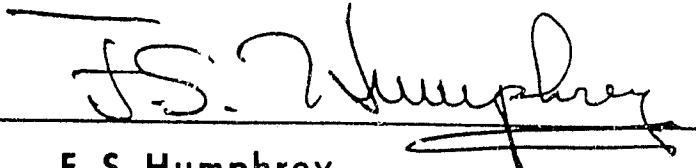
(CATEGORY)

# **NASCOM NETWORK GROUND COMMUNICATIONS RELIABILITY REPORT**

**JANUARY 1967**

**Prepared by**

**NETWORK REVIEW AND ANALYSIS BRANCH  
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Greenbelt, Maryland**

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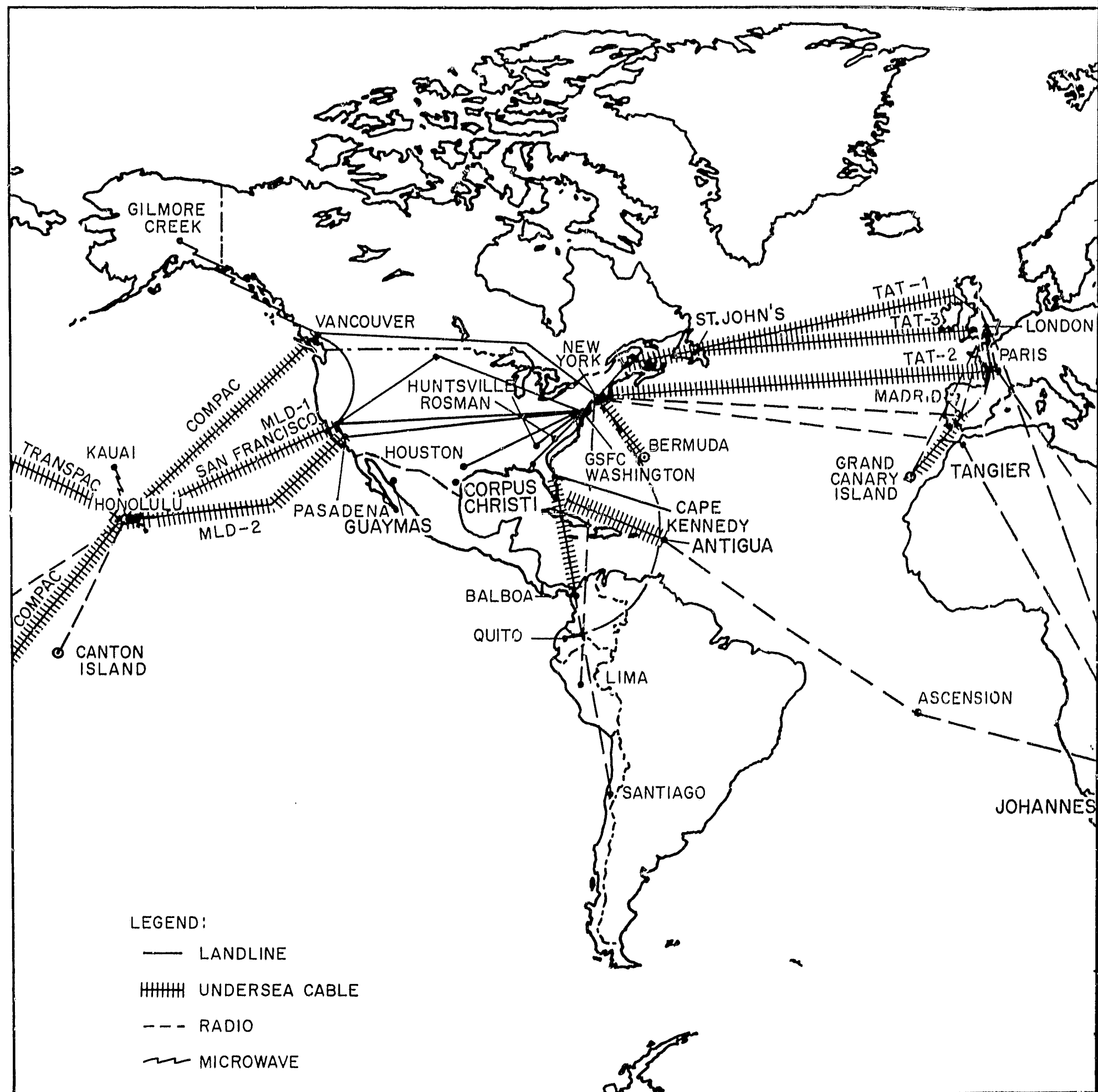
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\*Trouble categories, which are abbreviated in some tables, are spelled in full in Table 6. Code designations are also indicated in Table 6.



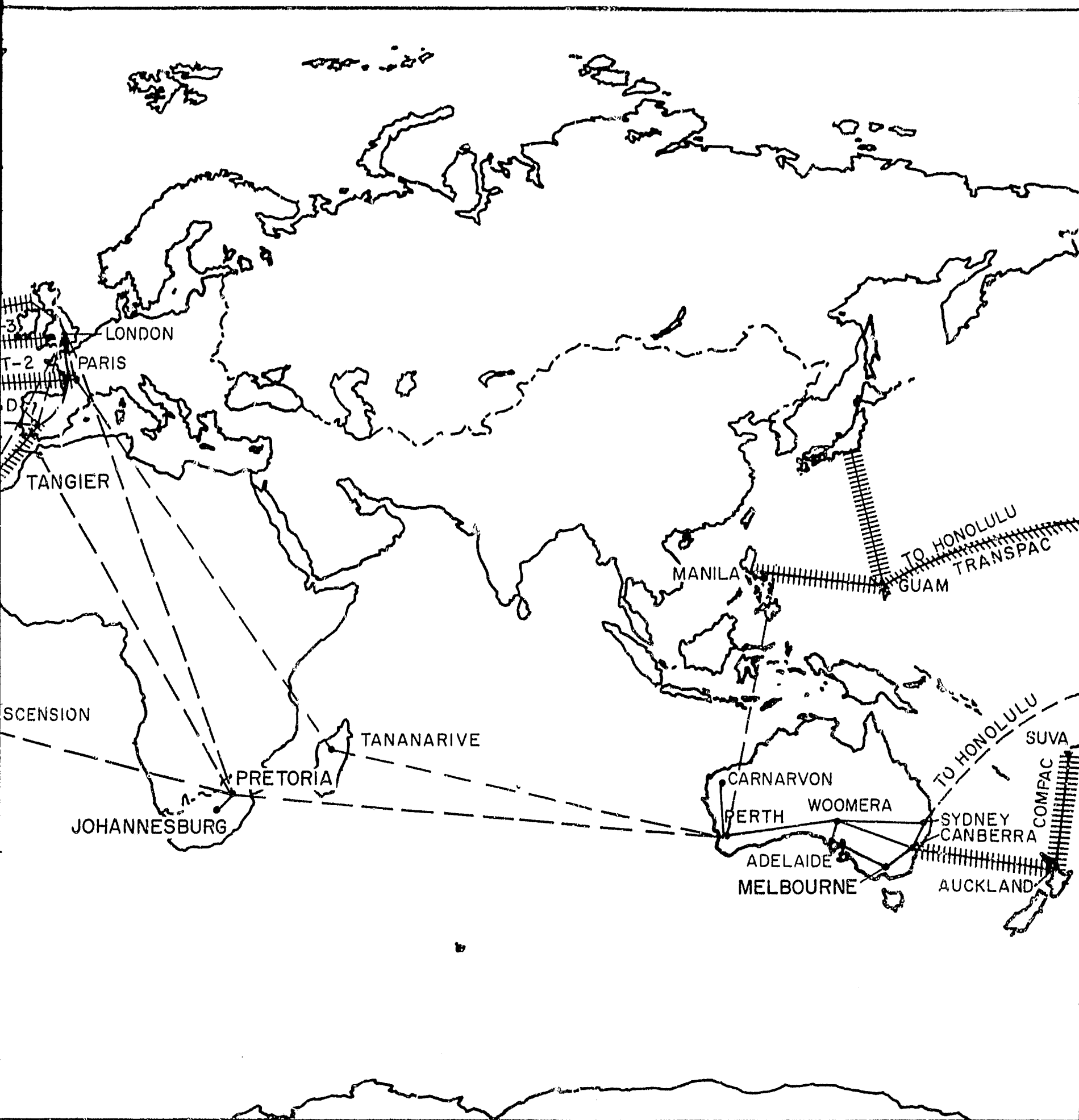


Figure 1. Map of NASCOM Network



# NASCOM NETWORK GROUND COMMUNICATIONS RELIABILITY REPORT

## INTRODUCTION

### General

The NASCOM Network is a global point-to-point communications system devoted to space project support, an integrated network in support of either manned vehicle space flights or unmanned scientific satellite missions. Stations throughout the world are interconnected by landline, undersea cable, and radio circuits. These circuits carry teletype, voice, and high-speed data in real-time support of missions of the National Aeronautics and Space Administration (NASA) of the United States of America.

The several teletype circuits comprising the network have been considered first as an integral network and then as individual circuits originating at specific stations. In many instances, multiple and diverse paths, each designated by a circuit number, originate at a single station. In these cases, more than one circuit will be the subject of discussion under the subheading of a station location. On the other hand, in some instances, circuits pass through one or more stations, while retaining the same circuit numbers. In these cases, the same circuit number will be encountered in discussions of several stations. However, reliability factors of all stations are considered.

Analyses of the NASCOM Voice/Data, High-Speed Data and Wideband Circuits will be found in the two latter sections of this report, following the analysis of individual teletype circuits.

### Definition of Terms

Operational reliability, as used in this report, is defined as the ratio of realized or actual station/circuit or network operating time to the total scheduled operating time, with this ratio then being expressed in percent.

In order to emphasize significant factors affecting the reliability of the network, discussions are made only of outages encountered on circuits which performed below the standards which have been established for the network and published in section 2.3.2 of the NASCOM Data System Development Plan. "The present reliability requirements for the various transmission modes are as follows: a. Microwave and landlines, 99.6 percent; b. Submarine cable, 98 percent; and c. High-frequency radio, 95 percent." Circuit performance which exceeds the standards is considered satisfactory and no reference is made to those circuits in the discussions. No attempt is made to combine the standards for circuits incorporating multiple media. Thus, a circuit consisting of some landline but a predominant length of HF radio path is considered unsatisfactory when it falls below 95 percent. Also, a transoceanic cable circuit is expected to perform at 98 percent, although a large portion of the circuit may be domestic landline to the cable-head.

In order to categorize stations/circuits for convenience in comparison, all percentages calculated for the various circuits have been rounded off to the nearest whole number. Thus, a calculated 86.32 percent is entered as 86 percent, and 99.65 percent as 100 percent. However, calculations in decimals are utilized in preparing Tables 1 and 2, with the result that rounded-off figures for the separate paths in Table 2 are not combined and again rounded off to prepare combined reliability in Table 1. It must always be inferred that comparisons are made with figures of the previous month unless a definite statement indicates a comparison with figures for a different period.

In this report the term "transmit" denotes transmission from Goddard Space Flight Center, and "receive" denotes reception at GSFC from an outlying station or site.

### Category Change

All wire defects, previously listed separately in Category F, are included in Equipment Failure, Category E, in order that Communications Processor Failures may be listed in Category F, separately from equipment failures at outlying stations.

### Data Sources

The data or information used in preparing this report has been obtained from:

Trouble Tickets (GSFC Form 22-35)

Analyses of Circuit Operations (GSFC Form 22-10)

NASA Circuit Logs (GSFC Form 22-8T)

Daily Communication Reports (DCR)

The Trouble Tickets and Daily Communication Reports provide most of the data or information used. To provide a "common denominator" for recording and interpreting trouble data, various trouble codes have been devised. These codes are used by the Facilities Control Group in writing the Trouble Tickets. The troubles are extracted and classified on the basis of these codes, permitting interruption patterns to be determined quantitatively. Code letter designations are shown in Tables 4 and 6.

Whenever a discrepancy or an ambiguity appears in the Trouble Tickets or in any of the other data sources listed above, Network Review and Analysis Branch personnel then contact the site or station involved to clarify, correct, or reconcile the data. The troubles have been re-classified by the analysts in order to separate NASA troubles from common carrier troubles.

## SUMMARY OF NASCOM NETWORK TELETYPE PERFORMANCE ANALYSIS

In January, the two GSFC-494 Communications Processors (CP) experienced a total accumulated outage of 3:34 hours resulting from 35 individual interruptions. The total number of interruptions is consistent with last month's figure but the total outage is 2:23 hours less than last month's total of 5:57 hours. Of the 35 interruptions, 16 occurred during "A" CP on-line operation and 19 occurred during "B" CP on-line operation with associated total outages of 1:30 hours and 2:04 hours respectively. The CP functional reliability was 99 percent throughout 739:07 hours of scheduled operation.

During "A" CP operation, ten interruptions were due to program faults, two each were due to unknown causes and equipment faults and one each was caused by operator error and maintenance. Program fault interruptions of 15, five and one minute occurred on January 21 and an interruption of three minutes occurred on January 4. Remaining program faults, of one-minute duration, included two on January 11, one on January 16, two on January 19 and one on January 20. Two one-minute interruptions, one each on January 3 and 7, resulted from unknown causes. Equipment fault interruptions for one minute occurred on January 19 and 22. Maintenance accounted for a two-minute outage on January 17 and the longest interruption, 54 minutes on January 10, was caused by operator error.

During "B" CP operation, seven interruptions were caused by program faults, three by unknown causes, five by equipment faults and four by power troubles. On January 19, three interruptions, two of one-minute and one of 22-minute duration, were caused by program faults. Remaining program fault interruptions included 20 minutes on January 10, two five-minute outages on January 21 and one minute on January 12. Unknown causes provided a one-minute interruption on each day January 6, 8 and 9. Two notable interruptions due to equipment faults were 28 and 17 minutes on January 13. Others included one minute on January 12 and one and two minutes on January 18. A power interruption caused an outage of five minutes on January 8. Outages due to power switching from commercial to diesel included four minutes on January 10 and two minutes on January 24 while a switch from diesel to commercial power on January 26 caused a six minute interruption.

The NASCOM network teletype circuits achieved an average reliability of 99 percent during 216,826 hours of scheduled operation. Compared to December, the reliability and hours of scheduled operation increased by one percentage point and 57,386 hours respectively.

Total teletype outage decreased from 2,640:04 hours to 2,205:15, an improvement of 434:49 hours. This, in conjunction with the increased operating hours, was responsible for the increase in overall operational reliability. Eight outage categories had a decrease in total outage while three categories had an increase.

Total outage, due to problems where no trouble was determined, increased from 1:43 hours to 11:24 hours, the highest total in this category since September. Common carrier total outage was 738:37 hours, an increase of 17:37 hours over last month's total. This was associated with an increase in the number of interruptions from 727 in December to 833. Total outage due to operator error increased from 10:01 hours to 13:35 hours, the highest since October.

Improvement, with regard to total outage, occurred in eight trouble categories. Significant change occurred in equipment failures where the total outage decreased from 110:55 hours to 35:49 hours with an associated decrease in interruptions from 51 to 40 and in outages due to interference where the decrease was from 80:03 to 13:46 hours with a decrease in interruptions from 37 to 20. The 13:46 hours total for interference represents the lowest figure since January, 1965. Total outage due to CP troubles decreased from 736:39 to 468:12 hours. Outage due to poor propagation was 841:14 hours, an improvement of 23:29 hours while the outage due to frequency change was 43:11 hours, an improvement of 26:21 hours. Remaining outage totals were ten minutes for equipment adjustments, down from 2:06 hours, 3:13 hours for maintenance, down from 5:59 hours; and 36:04 hours for power failures, down from 37:23 hours.

**TABLE 1**  
**NASCOM Network Teletype Circuit Reliability**

STATION	CIRCUIT	AUG 1966	SEP 1966	OCT 1966	NOV 1966	DEC 1966	JAN 1967	SIX-MONTH AVERAGE
Adelaide/ACSW	AADE-561	100	100	100	100	100	100	100
	AADE-562	100	100	100	100	100	100	100
	AADE-563	100	100	100	100	100	100	100
	AADE-564	100	100	100	100	100	100	100
	AADE-565	100	100	100	100	100	100	100
	AADE-566	100	100	100	100	100	100	100
	AADE-581	100	100	100	100	100	100	100
	AADE-582	100	100	-	100	100	100	-
	AADE-583	100	100	-	100	100	99	-
	AADE-584	100	100	100	100	100	100	100
Ascension Island	AADE-585	100	100	100	100	100	100	100
	GSEN-58877	94	93	85	89	84	89	89
	GACN-58879	97	100	-	-	84	89	-
Barstow	GACN-58880	97	100	-	-	81	88	-
	GATS-3005	100	99	98	97	99	99	99
Bermuda Island	GAVE-3001	100	100	99	98	99	99	99
	GBDA-58901	99	100	100	99	99	99	99
Cambridge	GBDA-58902	99	100	99	97	99	99	99
	GSAO-3308	99	98	99	98	99	99	99
Canberra/GSFC	ACSW-3050	100	99	99	99	-	99	-
	ACSW-3051	99	99	98	99	-	99	-
	ACSW-3052	99	99	99	99	-	99	-
	ACSW-3057	97	98	100	99	-	99	-
	ACSW-58833	98	100	99	99	-	98	-
	ACSW-58887	99	100	100	100	-	100	-
	ACSW-58888	99	100	100	100	-	100	-
	ACSW-58913	99	100	100	100	-	100	-
	ACSW-58918	99	100	99	99	-	99	-
	AACT-271	100	100	100	100	97	100	100
Canberra/ACSW	AACT-272	-	-	99	100	100	100	-
	ACNB-281	99	95	97	100	98	100	98
	ANBE-261	100	100	100	99	100	100	100
	ANBE-262	-	-	-	-	-	100	-
	ANBE-263	-	-	-	100	-	100	-
	ANBE-264	-	-	-	-	-	100	-
	PCTN-58914	99	98	97	99	99	99	99
Canton Island/PHON Cape Kennedy	GCVN-58949	100	100	99	99	99	100	100
	GCPN-58940	100	100	100	99	99	99	100
	GKAP-58938	100	100	99	99	99	100	100
	GKEN-58935	100	100	99	99	99	99	99
	GMCC-58936	99	100	100	100	99	100	100
	GMCC-58943	100	100	99	99	99	100	100

TABLE 1 (Continued)

STATION	CIRCUIT	AUG 1966	SEP 1966	OCT 1966	NOV 1966	DEC 1966	JAN 1967	SIX-MONTH AVERAGE
Cape Kennedy	GMCC-58944	99	100	99	99	99	100	99
	GMC 58945	100	100	100	100	99	100	100
	GMCC-58947	100	100	100	100	99	100	100
	GMCC-58948	99	100	100	100	99	100	100
	GMIL-58950	100	100	99	99	98	99	99
	GMIL-58951	100	99	100	99	98	99	99
	GMIL-58995	-	-	-	-	-	100	-
	GMPA-58941	100	100	99	99	99	100	100
	GPVE-58942	99	100	99	99	99	100	99
	JCAP-58937	100	100	100	100	99	100	100
Carnarvon/AADE	ACRO-663	98	100	99	99	100	98	99
	ACRO-664	99	100	99	99	100	98	99
Corpus Christi	GTEX-58906	99	100	99	99	99	100	99
	GTEX-58907	99	100	100	99	99	100	100
Eglin Air Force Base	GEGL-58908	98	100	98	99	99	99	99
Fort Myers	GYRS-3302	98	99	96	99	97	98	98
Gilmore Creek	GMOR-3077	99	99	98	98	99	99	99
	GULA-58930	99	100	100	99	99	99	99
Goldstone	GGDS-58867	-	-	100	99	97	97	-
	GGDS-58868	-	-	100	99	97	98	-
/JJPL	JGLD-TK-1/8	99	98	98	99	99	99	99
Grand Bahamas I.	GGBM-58892	-	-	-	-	88	-	-
Grand Canary I./LLDN	LCYI-58905	98	99	97	99	95	99	98
	LCYI-58953	-	99	98	97	-	100	-
	LCYI-20	98	98	98	100	97	98	98
Guam/PHON	PGWM-73	100	90	98	99	100	100	98
	PGWM-91	-	-	97	99	100	100	-
Guaymas	GGYM-58910	98	99	98	99	97	99	98
	GGYM-58911	98	98	99	99	97	99	98
Honolulu/GSFC	PHON-58829	-	-	-	-	99	99	-
	PHON-58839	-	-	-	-	99	100	-
	PHON-58916	-	-	-	-	99	100	-
	PHON-58917	-	-	-	-	99	100	-
	PHON-58960	-	-	-	-	-	100	-
	PHON-58975	-	-	-	-	-	100	-
	PHON-58988	-	-	-	-	-	100	-
	PHON-58989	-	-	-	-	99	99	-
	PHON-58992	-	-	-	-	99	99	-
	HDMA-58961	100	99	100	99	99	99	99
	HDMA-58962	100	99	100	99	99	99	99
	HDMA-58963	100	99	100	99	99	99	99

TABLE 1 (Continued)

STATION	CIRCUIT	AUG 1966	SEP 1966	OCT 1966	NOV 1966	DEC 1966	JAN 1967	SIX-MONTH AVERAGE
Houston	HDMA-58964	100	99	100	99	99	99	99
	HDMA-58965	100	99	100	99	99	99	99
	HDMA-58971	100	99	100	99	99	99	99
	HDMA-58972	100	99	100	99	99	99	99
	HMSC-58959	100	100	100	100	100	100	100
	HMSC-58966	100	100	100	99	99	99	100
	HMSC-58967	100	100	100	99	99	99	100
	HMSC-58968	100	100	100	99	99	99	100
	HMSC-58970	100	99	100	99	99	99	99
	HMTS-58969	100	99	100	99	99	99	99
Huntsville	GALA-3079	100	100	99	99	99	100	100
	GALA-58954	100	100	100	99	99	100	100
Johannesburg/AADE /GSFC /LLDN	GBUR-668	85	85	93	94	92	94	91
	GBUR-3260	96	92	93	92	90	89	92
	LJOB-18	92	94	95	95	90	96	94
	LJOB-24	92	94	95	95	91	95	94
	LJOB-3261	91	95	96	96	90	94	94
Kauai Island/PHON	PHAW-58912	100	99	99	99	100	100	100
	PHAW-58915	99	99	99	99	100	100	99
Lima	GAPU-58856	92	93	95	98	96	97	95
London/GSFC	LLDN-3261	100	100	100	99	-	100	-
	LLDN-3262	99	100	100	99	-	100	-
	LLDN-58852	100	100	100	-	-	100	-
	LLDN-58853	100	100	100	-	-	100	-
	LLDN-58854	100	100	100	-	-	100	-
	LLDN-58855	100	99	100	-	-	100	-
	LLDN-58903	98	100	100	99	-	100	-
	LLDN-58904	100	100	100	99	-	100	-
	LLDN-58905	100	100	99	99	-	100	-
	LLDN-58953	100	100	99	99	-	100	-
	LLDN-58993	100	100	100	99	-	100	-
Madrid/GSFC /LLDN	LRID-3263	98	96	97	98	95	99	97
	LRID-7	98	99	99	100	100	98	99
	LRID-8	98	99	98	99	100	98	99
	LRID-9	98	99	98	100	100	99	99
	LRID-10	96	99	99	100	100	99	99
	LRID-11	98	99	99	100	99	99	99
	LRID-13	99	100	99	100	99	100	100
	LRID-14	99	100	99	100	100	100	100
	LRID-16	98	99	98	100	100	99	99
Pasadena	JJPL-3002	99	98	98	99	99	99	99
	JJPL-3006	99	100	100	100	100	100	100
	JJPL-3007	100	99	100	100	100	100	100

TABLE 1 (Continued)

STATION	CIRCUIT	AUG 1966	SEP 1966	OCT 1966	NOV 1966	DEC 1966	JAN 1967	SIX-MONTH AVERAGE
Pasadena	JJPL-3008	99	99	98	100	100	100	99
	JJPL-3009	100	100	98	100	100	99	100
	JJPL-58858	100	100	100	100	-	100	-
	JJPL-58859	100	100	100	100	100	100	100
	JJPL-58860	100	100	100	100	100	99	100
	JJPL-58861	100	100	100	100	100	100	100
	JJPL-58862	100	100	100	100	100	100	100
	JJPL-58863	100	100	100	100	100	100	100
	JJPL-58921	100	100	100	100	100	100	100
	JJPL-58925	100	100	100	100	-	100	-
	JJPL-58926	100	100	100	100	100	100	100
	JJPL-58927	100	100	100	100	99	100	100
	JJPL-58928	100	100	100	100	-	100	-
	JJPL-58929	100	100	100	100	100	100	100
	JJPL-58983	-	-	100	100	100	100	-
	JJPL-58984	-	-	100	100	-	100	-
Point Arguello	GCAL-58922	99	100	100	100	99	94	99
	GRGO-58920	100	100	100	100	99	95	99
Princeton	GHNJ-3300	99	100	100	99	99	99	99
Quito	GJPC-3258	98	96	98	99	98	98	98
	GQUI-3259	98	97	98	99	98	98	98
Rosman	GNAT-3317	-	97	-	99	98	98	-
	GROS-3307	99	97	99	99	98	96	98
	GRST-3316	80	99	97	98	96	97	95
St. John's Santiago	GFLD-3250	100	99	99	99	99	99	99
	GAGO-3256	91	94	95	98	98	96	95
	GEDS-3255	89	91	95	98	97	95	94
Tananarive/AADE /LLDN	LTAN-666	100	100	99	-	-	98	-
	LTAN-1	98	99	98	98	96	96	98
Toowoomba/ACSW	ACBY-471	-	-	99	100	99	99	-
	ACBY-472	-	-	99	100	99	99	-
Wallops Island	GWAB-3305	96	98	98	100	99	99	98
	GWAB-3314	96	98	98	100	99	99	98
	GWAC-3312	96	98	98	100	95	99	98
	GWAC-3313	96	98	98	100	99	99	98
	GWGE-3303	-	98	98	100	99	99	-
Washington	NASA-HQ-3309	100	99	100	99	98	99	99
White Sands	GWHS-58909	100	100	100	100	98	99	100
Winkfield/LLDN	LWNK-58903	100	99	100	100	99	100	100
Woomera/AADE	AOMJ-561	-	-	-	100	-	100	-
	AOMJ-562	-	-	-	100	-	100	-
	AOMJ-563	-	-	-	100	-	100	-

TABLE 2

Teletype Circuit Lost Time by Trouble Categories (Transmit and Receive Paths Listed Separately)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Adelaide/ACSW	AADE-561-T	-	1: 16	-	-	-	-	-	-	-	-	-	1: 16	744	100
	AADE-561-R	-	1: 43	-	-	-	-	-	-	-	-	-	1: 43	744	100
	AADE-562-T	-	1: 16	-	-	-	-	-	-	-	-	-	1: 16	744	100
	AADE-562-R	-	1: 43	-	-	-	-	-	-	-	-	-	1: 43	744	100
	AADE-563-T	-	2: 19	-	-	-	-	-	-	-	-	-	2: 19	744	100
	AADE-563-R	-	1: 43	-	-	-	-	-	-	-	-	-	1: 43	744	100
	AADE-564-T	-	1: 16	-	-	-	-	-	-	-	-	-	1: 16	744	100
	AADE-564-R	-	1: 43	-	-	-	-	-	-	-	-	-	1: 43	744	100
	AADE-565-T	-	1: 16	-	-	-	-	-	-	-	-	-	1: 16	744	100
	AADE-565-R	-	1: 43	-	-	-	-	-	-	-	-	-	1: 43	744	100
	AADE-566-T	-	1: 16	-	-	-	-	-	-	-	-	-	1: 16	744	100
	AADE-566-R	-	1: 43	-	-	-	-	-	-	-	-	-	1: 43	744	100
	AADE-581-T	-	1: 18	-	-	-	-	-	-	-	-	-	1: 18	744	100
	AADE-581-R	-	1: 27	-	-	-	-	-	-	-	-	-	1: 27	744	100
	AADE-582-T	-	3: 33	-	-	-	-	-	-	-	-	-	3: 33	744	100
	AADE-582-R	-	3: 42	-	-	-	-	-	-	-	-	-	3: 42	744	100
	AADE-583-T	-	3: 06	-	-	-	-	-	-	-	-	-	3: 06	744	100
	AADE-583-R	-	5: 38	-	-	-	-	-	-	-	-	-	5: 38	744	99
	AADE-584-T	-	: 51	-	-	-	-	-	-	-	-	-	: 51	744	100
	AADE-584-R	-	: 59	-	-	-	-	-	-	-	-	-	: 59	744	100
Ascension Island	AADE-585-T	-	: 41	-	-	-	-	-	-	-	-	-	: 41	744	100
	AADE-585-R	-	: 41	-	-	-	-	-	-	-	-	-	: 41	744	100
	GSEN-58877-T	-	9: 28	-	-	: 15	3: 27	35: 18	-	-	-	-	48: 28	560	91
	GSEN-58877-R	-	9: 58	: 50	-	: 05	3: 27	64: 08	-	-	-	-	78: 28	560	86
	GACN-58879-T	-	5: 16	: 20	-	: 15	3: 27	42: 23	-	: 15	-	-	51: 56	560	91
	GACN-58879-R	-	9: 48	-	-	: 05	3: 27	56: 28	-	: 30	-	-	70: 18	560	87
	GACN-58880-T	-	3: 31	-	-	: 15	3: 27	29: 09	-	-	-	-	36: 22	560	94
	GACN-58880-R	-	8: 25	-	-	: 05	3: 27	89: 27	-	: 30	-	-	101: 54	560	82
	GATS-3005-T	-	2: 34	-	-	: 49	3: 34	-	-	-	-	-	6: 57	739	99
	GATS-3005-R	-	3: 20	-	-	: 49	3: 34	-	-	-	-	-	7: 43	739	99
Barstow	GAVE-3001-T	-	2: 07	-	-	-	3: 34	-	-	-	-	-	5: 41	739	99
	GAVE-3001-R	-	: 47	-	-	-	3: 34	-	-	-	-	-	4: 21	739	99
	GBDA-58901-T	-	: 20	-	-	-	2: 53	-	-	-	-	-	3: 13	269	99
	GBDA-58901-R	-	1: 00	-	-	-	2: 53	-	-	-	-	-	3: 53	269	99
Bermuda Island	GBDA-58902-T	-	: 10	-	-	-	2: 53	-	-	-	-	-	3: 03	269	99
	GBDA-58902-R	-	: 10	-	-	-	2: 53	-	-	-	-	-	3: 03	269	99
	GSAO-3308-T	-	1: 27	-	-	2: 38	4: 35	-	-	-	1: 30	-	10: 10	739	99
	GSAO-3308-R	-	1: 00	-	-	-	4: 35	-	-	-	1: 00	-	6: 35	739	99
Cambridge															



TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Canberra/GSFC	ACSW-3050-T	-	1:26	-	-	-	3:34	-	-	-	-	-	5:00	739	99
	ACSW-3050-R	-	1:37	-	-	-	3:34	-	-	-	-	-	5:11	739	99
	ACSW-3051-T	-	3:15	-	-	-	3:34	-	-	-	-	-	6:49	739	99
	ACSW-3051-R	-	3:24	-	-	-	3:34	-	-	-	-	-	6:58	739	99
	ACSW-3052-T	-	2:39	-	-	-	3:34	-	-	-	-	-	6:13	739	99
	ACSW-3052-R	-	2:52	-	-	-	3:34	-	-	-	-	-	6:26	739	99
	ACSW-3057-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	99
	ACSW-3057-R	-	:15	-	-	-	3:34	-	-	-	-	-	3:49	739	99
	ACSW-58833-T	-	11:20	-	-	-	3:34	-	-	-	-	-	14:54	739	98
	ACSW-58833-R	-	13:35	-	-	-	3:34	-	-	-	-	-	17:09	739	98
	ACSW-58887-T	-	:15	-	-	-	-	-	-	-	-	-	:15	744	100
	ACSW-58887-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	ACSW-58888-T	-	:38	-	-	-	-	-	-	-	-	-	:38	744	100
	ACSW-58888-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	ACSW-58913-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	ACSW-58913-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	ACSW-58918-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	ACSW-58918-R	-	1:12	-	-	-	3:34	-	-	-	-	-	4:46	739	99
	ACSW-58934-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Canberra/ACSW	ACSW-58934-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	AACT-271-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	AACT-271-R	-	-	-	-	7:20	-	-	-	-	-	-	7:20	744	99
	AACT-272-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	AACT-272-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	ACNB-281-T	-	-	-	-	-	-	-	-	-	-	-	-	678	100
	ACNB-281-R	-	-	-	-	-	-	-	-	-	-	-	-	678	100
	ANBE-261-T	-	-	-	-	-	-	-	-	-	-	:13	:13	722	100
	ANBE-261-R	-	-	-	-	-	-	-	-	-	-	:13	:13	722	100
	ANBE-262-T	-	:30	-	-	-	-	-	-	-	-	-	:30	722	100
Canton Island	ANBE-262-R	-	:30	-	-	-	-	-	-	-	-	-	:30	722	100
	ANBE-263-T	-	-	-	-	-	-	-	-	-	-	-	-	722	100
	ANBE-263-R	-	-	-	-	-	-	-	-	-	-	-	-	722	100
	ANBE-264-T	-	:36	-	-	-	-	-	-	-	-	-	:36	722	100
	ANBE-264-R	-	:36	-	-	-	-	-	-	-	-	-	:36	722	100
	PCITN-58914-T	-	-	-	-	-	-	-	-	:15	-	-	:15	218	100
	PCITN-58914-R	-	4:17	-	-	:16	-	:28	-	:37	-	-	5:38	218	97
	GCNV-58949-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GCNV-58949-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GCNV-58949-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAUSE	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Cape Kennedy	GCPN-58940-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GCPN-58940-R	-	1:55	-	-	-	3:34	-	-	-	-	-	5:29	739	99
	GKAP-58938-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GKAP-58938-R	2:40	-	-	-	-	-	-	-	-	-	-	2:40	744	100
	GKEN-58935-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GKEN-58935-R	2:40	-	-	-	-	3:34	-	-	-	-	-	6:14	739	99
	GMCC-58936-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMCC-58936-R	2:40	-	-	-	-	-	-	-	-	-	-	2:40	744	100
	GMCC-58943-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GMCC-58943-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GMCC-58944-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GMCC-58944-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GMCC-58945-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMCC-58945-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMCC-58947-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMCC-58947-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMCC-58948-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMCC-58948-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GMIL-58950-T	-	3:21	-	-	-	3:34	-	-	-	-	-	-	744	100
	GMIL-58950-R	-	-	-	-	-	3:34	-	-	-	-	-	6:55	736	99
	GMIL-58951-T	-	2:40	-	-	-	3:34	-	-	-	-	-	3:34	736	100
	GMIL-58951-R	-	3:15	-	-	-	3:34	-	-	-	-	-	6:14	736	99
	GMIL-58995-T	-	1:00	-	-	-	3:34	-	-	-	-	-	6:49	736	99
	GMIL-58995-R	-	1:00	-	-	-	-	-	-	-	-	-	1:00	744	100
Carnarvon/ AADE	GMPA-58941-T	-	-	-	-	-	3:34	-	-	-	-	-	1:00	744	100
	GMPA-58941-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GPVE-58942-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GPVE-58942-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	JCAP-58937-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	JCAP-58937-R	2:40	-	-	-	-	-	-	-	-	-	-	2:40	744	100
	ACRO-663-T	-	9:36	-	-	-	-	-	-	-	-	-	9:36	384	97
	ACRO-663-R	-	7:51	-	-	-	-	-	-	-	-	-	7:51	384	98
	ACRO-664-T	-	9:40	-	-	-	-	-	-	-	-	-	9:40	384	97
	ACRO-664-R	-	8:55	-	-	-	-	-	-	-	-	-	8:55	384	98
Corpus Christi	GTEX-58906-T	-	-	-	-	-	:59	-	-	-	-	-	:59	250	100
	GTEX-58906-R	-	-	-	-	-	:59	-	-	-	-	-	:59	250	100

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Corpus Christi	GTEX-58907-T	-	: 30	-	-	-	: 59	-	-	-	-	-	1: 29	250	99
Eglin Air Force Base	GTEX-58907-R	-	-	-	-	-	: 59	-	-	-	-	-	: 59	250	100
Fort Myers	GEG-58908-T	-	: 15	-	-	-	: 56	-	-	-	-	-	1: 11	202	99
	GEG-58908-R	-	1: 05	-	-	-	: 56	-	-	-	-	-	2: 01	202	99
	GYRS-3302-T	-	8: 31	-	-	-	3: 34	-	-	-	-	-	12: 05	739	98
Gilmore Creek	GYRS-3302-R	-	9: 10	-	-	: 13	3: 34	-	-	-	-	-	12: 57	739	98
	GMOR-3077-T	-	4: 20	-	-	-	3: 34	-	-	-	-	-	7: 54	739	99
	GMOR-3077-R	-	3: 20	-	-	-	3: 34	-	-	-	-	-	6: 54	739	99
	GULA-58930-T	-	1: 12	-	-	-	3: 34	-	-	-	-	-	4: 46	739	99
Goldstone	GULA-58930-R	-	: 06	-	-	-	3: 34	-	-	-	-	-	3: 40	739	100
	GGDS-58867-T	-	: 30	-	-	-	: 42	-	-	-	-	-	1: 12	165	99
	GGDS-58867-R	-	6: 34	-	-	-	: 42	-	-	-	-	-	7: 16	165	96
	GGDS-58868-T	-	: 30	-	-	-	: 42	-	-	-	-	-	1: 12	165	99
	GGDS-58868-R	-	4: 30	-	-	-	: 42	-	-	-	-	-	5: 12	165	97
/JJPL	JGLD-TK- 1/8-T	-	6: 55	-	-	-	-	-	-	-	: 43	-	7: 38	744	99
	JGLD-TK- 1/8-R	-	7: 24	-	-	: 18	-	-	-	-	-	-	7: 42	744	99
Grand Bahamas Island	GGBM-58892-T	-	3: 05	-	-	-	-	-	-	-	-	-	3: 05	179	98
Grand Canary I./ LIDN	GGBM-58892-R	-	: 35	-	-	-	-	-	-	-	-	-	: 35	179	100
	LCYI-58905-T	: 03	: 20	-	-	-	-	-	-	-	-	-	: 23	195	100
	LCYI-58905-R	-	2: 39	: 30	-	-	-	1: 23	-	: 30	-	-	5: 02	195	97
	LCYI-58953-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LCYI-58953-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
/Madrid	LCYI-20-T	-	2: 46	-	-	-	-	-	-	-	-	-	2: 46	195	99
	LCYI-20-R	-	3: 35	-	-	-	-	-	-	-	-	-	3: 35	195	98
Guam	PGWM-73-T	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	PGWM-73-R	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	PGWM-91-T	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	PGWM-91-R	-	-	-	-	-	-	-	-	-	-	-	-	352	100
Guaymas	GGYM-58910-T	-	3: 28	-	-	-	3: 34	-	-	-	-	-	7: 02	739	99
	GGYM-58910-R	-	3: 28	-	-	-	3: 34	-	-	-	-	-	7: 02	739	99
	GGYM-58911-T	-	3: 28	-	-	-	3: 34	-	-	-	-	-	7: 02	739	99
	GGYM-58911-R	-	3: 28	-	-	-	3: 34	-	-	-	-	-	7: 02	739	99
Honolulu/GSFC	PHON-58829-T	-	: 50	-	-	-	3: 34	-	-	-	-	-	4: 24	739	99
	PHON-58829-R	-	: 50	-	-	-	3: 34	-	-	-	-	-	4: 24	739	99
	PHON-58839-T	-	-	-	-	-	3: 34	-	-	-	-	-	3: 34	739	100
	PHON-58839-R	-	: 04	-	-	-	3: 34	-	-	-	-	-	3: 38	739	100

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Honolulu/GSFC	PHON-58916-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	PHON-58916-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	PHON-58917-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	PHON-58917-R	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	739	100
	PHON-58960-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	PHON-58960-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	PHON-58975-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	PHON-58975-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	PHON-58988-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	PHON-58988-R	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	739	100
	PHON-58989-T	-	:50	-	-	-	3:34	-	-	-	-	-	4:24	739	99
	PHON-58989-R	-	:50	-	-	-	3:34	-	-	-	-	-	4:24	739	99
	PHON-58992-T	-	2:57	-	-	-	3:34	-	-	-	-	-	6:31	739	99
	PHON-58992-R	-	2:50	-	-	-	3:34	-	-	-	-	-	6:24	739	99
	HDMA-58961-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
Houston	HDMA-58961-R	-	:30	-	-	-	3:34	-	-	-	-	-	4:04	691	99
	HDMA-58962-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HDMA-58962-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
	HDMA-58963-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HDMA-58963-R	-	:30	-	-	-	3:34	-	-	-	-	-	4:04	691	99
	HDMA-58964-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HDMA-58964-R	-	:30	-	-	-	3:34	-	-	-	-	-	4:04	691	99
	HDMA-58965-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HDMA-58965-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
	HDMA-58971-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HDMA-58971-R	-	:30	-	-	-	3:34	-	-	-	-	-	4:04	691	99
	HDMA-58972-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HDMA-58972-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
	HMSC-58959-T	-	:04	-	-	-	-	-	-	-	-	-	:04	696	100
	HMSC-58959-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	HMSC-58966-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HMSC-58966-R	-	:30	-	-	-	3:34	-	-	-	-	-	4:04	691	99
	HMSC-58967-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HMSC-58967-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
	HMSC-58968-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HMSC-58968-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
	HMSC-58970-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HMSC-58970-R	-	:30	-	-	-	3:34	-	-	-	-	-	4:04	691	99

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Houston  Huntsville	HMTS-58969-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	HMTS-58969-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
	GALA-3079-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GALA-3079-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GALA-58954-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
Johannesburg/ AADE /GSFC  /LLDN	GALA-58954-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	739	100
	GBUR-668-T	-	7:32	-	-	-	-	28:33	-	8:33	-	-	44:38	744	94
	GBUR-668-R	-	4:44	-	-	-	-	23:32	-	12:07	-	-	40:23	744	95
	GBUR-3260-T	-	4:47	-	-	-	3:34	69:40	:05	2:40	-	-	80:46	736	89
	GBUR-3260-R	-	9:17	-	-	-	3:34	61:30	:05	2:25	-	-	76:51	736	90
	LJOB-18-T	-	4:08	-	-	-	-	29:01	1:10	:29	-	-	34:48	742	95
	LJOB-18-R	-	4:25	-	-	-	-	24:02	1:10	:29	-	-	30:06	742	96
	LJOB-24-T	-	5:58	-	-	-	-	31:17	1:10	:59	-	-	39:24	739	95
	LJOB-24-R	-	7:38	-	-	-	-	26:18	1:10	:59	-	-	36:05	739	95
	LJOB-3261-T	-	10:28	-	-	-	-	33:03	1:10	:59	-	-	45:40	742	94
	LJOB-3261-R	:03	9:52	-	-	-	-	28:14	1:10	:59	-	-	40:18	742	95
	PHAW-58912-T	-	:13	-	-	-	-	-	-	-	-	-	:13	744	100
	PHAW-58912-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	PHAW-58915-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	PHAW-58915-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Lima	GAPU-58856-T	-	:27	-	-	2:35	3:34	16:36	2:50	:30	-	:36	27:08	739	96
	GAPU-58856-R	-	:23	-	:25	-	3:34	18:02	-	1:16	-	:36	24:16	739	97
London	LLDN-3261-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-3261-R	-	:39	-	-	-	-	-	-	-	-	-	:39	744	100
	LLDN-3262-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-3262-R	-	:15	-	-	-	-	-	-	-	-	-	:15	744	100
	LLDN-58852-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58852-R	-	1:30	-	-	-	-	-	-	-	-	-	1:30	744	100
	LLDN-58853-T	-	:19	-	-	-	-	-	-	-	-	-	:19	744	100
	LLDN-58853-R	-	:35	-	-	-	-	-	-	-	-	-	:35	744	100
	LLDN-58854-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58854-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58855-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58855-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58903-T	-	1:07	-	-	-	-	-	-	-	-	-	1:07	744	100
	LLDN-58903-R	-	1:34	-	-	-	-	-	-	-	-	-	1:34	744	100
	LLDN-58904-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58904-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELI- BILITY
London	LLDN-58905-T	-	:55	-	-	-	-	-	-	-	-	-	:55	744	100
	LLDN-58905-R	-	1:34	-	-	-	-	-	-	-	-	-	1:34	744	100
	LLDN-58953-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58953-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	LLDN-58993-T	-	:55	-	-	-	-	-	-	-	-	-	:55	744	100
	LLDN-58993-R	-	2:49	-	-	-	-	-	-	-	-	-	2:49	744	100
	LRID-3263-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	489	99
	LRID-3263-R	-	:15	-	-	-	3:34	-	-	-	-	-	3:49	489	99
	LRID-7-T	-	7:41	1:59	-	-	-	-	-	-	-	-	9:40	494	98
	LRID-7-R	-	7:15	2:44	-	-	-	-	-	-	-	-	9:59	494	98
Madrid/GSFC	LRID-8-T	:03	11:11	:32	-	-	-	-	-	-	-	-	11:46	494	98
	LRID-8-R	:02	5:53	:32	-	-	-	-	-	-	-	-	6:27	494	99
	LRID-9-T	:01	6:37	-	-	-	-	-	-	-	-	-	6:38	494	99
	LRID-9-R	-	2:23	-	-	-	-	-	-	-	-	-	2:23	494	100
	LRID-10-T	:01	6:54	-	-	-	-	-	-	-	-	-	6:55	494	99
	LRID-10-R	-	2:21	-	-	-	-	-	-	-	-	-	2:21	494	100
	LRID-11-T	:13	4:48	-	-	-	-	-	-	-	-	-	5:01	494	99
	LRID-11-R	:08	4:22	-	-	-	-	-	-	-	-	-	4:30	494	99
	LRID-13-T	-	:40	:32	-	:25	-	-	-	-	-	-	1:37	494	100
	LRID-13-R	-	:13	:32	-	-	-	-	-	-	-	-	:45	494	100
Pasadena	LRID-14-T	:06	:55	:32	-	-	-	-	-	-	-	-	1:33	494	100
	LRID-14-R	-	:13	:32	-	-	-	-	-	-	-	-	:45	494	100
	LRID-16-T	-	6:04	-	-	-	-	-	-	-	-	-	6:04	494	99
	LRID-16-R	-	4:51	-	-	-	-	-	-	-	-	-	4:51	494	99
	JJPL-3002-T	-	4:03	-	-	:26	3:34	-	-	-	-	-	8:03	738	99
	JJPL-3002-R	-	3:15	-	-	-	3:34	-	-	-	-	-	6:49	738	99
	JJPL-3006-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-3006-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-3007-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-3007-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-3008-T	-	3:05	-	-	-	-	-	-	-	-	-	3:05	743	100
	JJPL-3008-R	-	3:05	-	-	-	-	-	-	-	-	-	3:05	743	100
	JJPL-3009-T	-	4:35	-	-	-	-	-	-	-	-	-	4:35	743	99
	JJPL-3009-R	-	4:35	-	-	-	-	-	-	-	-	-	4:35	743	99
	JJPL-58858-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58858-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58859-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58859-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
		-	-	-	-	-	-	-	-	-	-	-	-	743	100
		-	-	-	-	-	-	-	-	-	-	-	-	743	100

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Pasadena	JJPL-58860-T	-	-	-	-	3:51	-	-	-	-	-	-	3:51	743	99
	JJPL-58860-R	-	-	-	-	3:51	-	-	-	-	-	-	3:51	743	100
	JJPL-58861-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58861-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58862-T	-	:12	-	-	-	-	-	-	-	-	-	:12	743	100
	JJPL-58862-R	-	:12	-	-	-	-	-	-	-	-	-	:12	743	100
	JJPL-58863-T	-	-	-	-	:50	-	-	-	-	-	-	:50	743	100
	JJPL-58863-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58921-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58921-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58925-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58925-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58926-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58926-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58927-T	-	-	-	-	-	3:34	-	-	-	-	-	3:34	738	100
Point Arguello	JJPL-58927-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	738	100
	JJPL-58928-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58928-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58929-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58929-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58983-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58983-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58984-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	JJPL-58984-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	GCAL-58922-T	-	12:04	-	-	-	:49	-	-	-	-	-	12:53	217	94
Princeton	GCAL-58922-R	-	13:04	-	-	-	:49	-	-	-	-	-	13:53	217	94
	GRGO-58926-T	-	9:15	-	-	-	:49	-	-	-	-	-	10:04	217	95
	GRGO-58920-R	-	8:45	-	-	-	:49	-	-	-	-	-	9:34	217	96
	GHNJ-3300-T	-	1:48	-	-	-	3:34	-	-	-	-	-	5:22	723	99
	GHNJ-3300-R	-	:50	-	-	-	3:34	-	-	-	-	-	4:24	739	99
	GJPC-3258-T	-	3:07	-	:10	-	3:34	8:00	-	-	-	-	14:51	739	98
Quito	GJPC-3258-R	-	2:15	-	-	:15	3:34	6:35	-	:53	-	-	13:32	739	98
	GQUI-3259-T	-	1:00	-	-	-	3:34	8:00	-	-	-	-	12:34	739	98
	GQUI-3259-R	-	:15	-	-	:15	3:34	6:35	-	:53	-	-	11:32	739	98
	GNAT-3317-T	-	12:45	-	-	1:05	3:34	-	-	-	-	:20	17:44	739	98
Rosman	GNAT-3317-R	-	12:45	-	-	1:05	3:34	-	-	-	-	:20	17:44	739	98
	GROS-3307-T	-	28:48	-	-	-	3:34	-	-	-	-	-	32:22	734	96
	GROS-3307-R	-	29:55	-	-	-	3:34	-	-	-	-	-	33:29	734	95

TABLE 2 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Rosman	GRST-3316-T	-	13:35	-	-	-	3:34	-	-	-	-	:20	17:29	739	98
St. John's	GRST-3316-R	-	18:02	-	-	-	3:34	-	-	-	-	:20	21:56	739	97
Santiago	GFLD-3250-T	-	4:23	-	-	-	3:34	-	-	-	-	-	7:57	739	99
	GFLD-3250-R	-	4:23	-	-	-	3:34	-	-	-	-	-	7:57	739	99
	GAGO-3256-T	-	6:09	-	-	-	3:34	11:16	:40	:15	-	-	21:54	739	97
	GAGO-3256-R	:02	5:59	1:30	-	1:43	3:34	22:35	1:03	2:15	-	-	38:41	739	95
	GEDS-3255-T	-	9:16	-	-	-	3:34	11:16	:10	:15	-	-	24:31	739	97
	GEDS-3255-R	:02	11:41	1:30	-	1:37	3:34	25:32	1:53	3:08	-	-	48:57	739	93
Tananarive/ AADE	LTAN-666-T	-	1:42	-	-	-	-	1:24	-	-	-	12:35	15:41	744	98
/LLDN	LTAN-666-R	-	2:52	-	-	-	-	1:24	-	-	-	12:35	16:51	744	98
	LTAN-1-T	-	12:28	-	-	:53	-	14:52	-	:15	-	3:30	21:58	744	96
	LTAN-1-R	-	10:16	-	-	1:40	-	15:13	-	:15	-	3:30	30:54	744	96
Toowoomba/ ACSW	ACBY-471-T	-	5:48	-	-	-	-	-	-	-	-	-	5:48	739	99
	ACBY-471-R	-	6:03	-	-	-	-	-	-	-	-	-	6:03	739	99
	ACBY-472-T	-	5:48	-	-	-	-	-	-	-	-	-	5:48	739	99
	ACBY-472-R	-	6:03	-	-	-	-	-	-	-	-	-	6:03	739	99
	GWAB-3305-T	-	:55	-	-	-	:49	-	-	-	-	-	1:44	176	99
Wallops Island	GWAB-3314-R	-	:10	-	-	-	:49	-	-	-	-	-	:59	176	99
	GWAC-3312-R	-	:10	-	-	-	:49	-	-	-	-	-	:59	176	99
	GWAC-3313-R	-	:10	-	-	-	:49	-	-	-	-	-	:59	176	99
	GWGE-3303-T	-	:10	-	-	-	:49	-	-	-	-	-	:59	176	99
	GWGE-3303-R	-	:10	-	-	-	:49	-	-	-	-	-	:59	176	99
Washington	NASA-HQ-3309-T	-	-	-	-	-	:59	-	-	-	-	-	:59	174	99
White Sands	NASA-HQ-3309-R	-	-	-	-	-	:59	-	-	-	-	-	:59	174	99
	GWHS-58909-T	-	-	-	-	-	:44	-	-	-	-	-	:44	168	100
	GWHS-58909-R	-	1:05	-	-	-	:44	-	-	-	-	-	1:49	168	99
Winkfield/LLDN	LWNK-58903-T	-	1:51	-	-	-	-	-	-	-	-	:28	2:19	744	100
	LWNK-58903-R	-	1:51	-	-	-	-	-	-	-	-	:28	2:19	744	100
Woomera/AADE	AOMJ-561-T	-	-	-	-	-	-	-	-	-	-	-	-	518	100
	AOMJ-561-R	-	-	-	-	-	-	-	-	-	-	-	-	518	100
	ACMJ-562-T	-	-	-	-	:45	-	-	-	-	-	-	:45	518	100
	AOMJ-562-R	-	-	-	-	:45	-	-	-	-	-	-	:45	518	100
	AOMJ-563-T	-	-	:30	-	-	-	-	-	-	-	-	:30	518	100
	AOMJ-563-R	-	-	:30	-	-	-	-	-	-	-	-	:30	518	100
TOTALS		11:24	738:37	13:35	:10	35:49	468:12	841:14	13:46	43:11	3:13	36:04	2205:15	216,826	98



TABLE 3

Teletype Circuit Interruptions by Trouble Categories and Average Durations

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Adelaide/ACSW	AADE-561-T	-	4	-	-	-	-	-	-	-	-	-	4	:19
	AADE-561-R	-	5	-	-	-	-	-	-	-	-	-	5	:21
	AADE-562-T	-	4	-	-	-	-	-	-	-	-	-	4	:19
	AADE-562-R	-	5	-	-	-	-	-	-	-	-	-	5	:21
	AADE-563-T	-	5	-	-	-	-	-	-	-	-	-	5	:28
	AADE-563-R	-	5	-	-	-	-	-	-	-	-	-	5	:21
	AADE-564-T	-	4	-	-	-	-	-	-	-	-	-	4	:19
	AADE-564-R	-	5	-	-	-	-	-	-	-	-	-	5	:21
	AADE-565-T	-	4	-	-	-	-	-	-	-	-	-	4	:19
	AADE-565-R	-	5	-	-	-	-	-	-	-	-	-	5	:21
	AADE-566-T	-	4	-	-	-	-	-	-	-	-	-	4	:19
	AADE-566-R	-	5	-	-	-	-	-	-	-	-	-	5	:21
	AADE-581-T	-	3	-	-	-	-	-	-	-	-	-	3	:26
	AADE-581-R	-	4	-	-	-	-	-	-	-	-	-	4	:22
	AADE-582-T	-	3	-	-	-	-	-	-	-	-	-	3	1:11
	AADE-582-R	-	4	-	-	-	-	-	-	-	-	-	4	:56
	AADE-583-T	-	2	-	-	-	-	-	-	-	-	-	2	1:33
	AADE-583-R	-	5	-	-	-	-	-	-	-	-	-	5	1:08
	AADE-584-T	-	2	-	-	-	-	-	-	-	-	-	2	:26
	AADE-584-R	-	3	-	-	-	-	-	-	-	-	-	3	:20
Ascension Island	AADE-585-T	-	1	-	-	-	-	-	-	-	-	-	1	:41
	AADE-585-R	-	1	-	-	-	-	-	-	-	-	-	1	:41
	GSEN-58877-T	-	12	-	-	1	32	32	-	-	-	-	77	:38
	GSEN-58877-R	-	7	2	-	1	32	59	-	-	-	-	101	:47
	GACN-58879-T	-	8	1	-	1	32	41	-	1	-	-	84	:37
	GACN-58879-R	-	9	-	-	1	32	53	-	2	-	-	97	:43
	GACN-58880-T	-	5	-	-	1	32	24	-	-	-	-	62	:35
	GACN-58880-R	-	7	-	-	1	32	56	-	2	-	-	98	1:02
	GATS-3005-T	-	2	-	-	1	35	-	-	-	-	-	38	:11
	GATS-3005-R	-	2	-	-	1	35	-	-	-	-	-	38	:12
Barstow	GAVE-3001-T	-	4	-	-	-	35	-	-	-	-	-	39	:09
	GAVE-3001-R	-	3	-	-	-	35	-	-	-	-	-	38	:07
	GBDA-58901-T	-	2	-	-	-	24	-	-	-	-	-	26	:07
	GBDA-58901-R	-	3	-	-	-	24	-	-	-	-	-	27	:09
Bermuda Island	GBDA-58902-T	-	1	-	-	-	24	-	-	-	-	-	25	:07
	GBDA-58902-R	-	1	-	-	-	24	-	-	-	-	-	25	:07
	GSAO-3308-T	-	2	-	-	3	36	-	-	-	2	-	43	:14
	GSAO-3308-R	-	1	-	-	-	36	-	-	-	1	-	38	:10

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Canberra/GSFC	ACSW-3050-T	-	4	-	-	-	35	-	-	-	-	-	39	:08
	ACSW-3050-R	-	5	-	-	-	35	-	-	-	-	-	40	:08
	ACSW-3051-T	-	2	-	-	-	35	-	-	-	-	-	37	:11
	ACSW-3051-R	-	3	-	-	-	35	-	-	-	-	-	38	:11
	ACSW-3052-T	-	3	-	-	-	35	-	-	-	-	-	38	:10
	ACSW-3052-R	-	4	-	-	-	35	-	-	-	-	-	39	:10
	ACSW-3057-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	ACSW-3057-R	-	1	-	-	-	35	-	-	-	-	-	36	:06
	ACSW-58833-T	-	1	-	-	-	35	-	-	-	-	-	36	:25
	ACSW-58833-R	-	4	-	-	-	35	-	-	-	-	-	39	:26
	ACSW-58887-T	-	1	-	-	-	35	-	-	-	-	-	1	:15
	ACSW-58887-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACSW-58888-T	-	3	-	-	-	-	-	-	-	-	-	3	:13
	ACSW-58888-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACSW-58913-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACSW-58913-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACSW-58918-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	ACSW-58918-R	-	2	-	-	-	35	-	-	-	-	-	37	:08
	ACSW-58934-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACSW-58934-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	AACT-271-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	AACT-271-R	-	-	-	-	1	-	-	-	-	-	-	1	7:20
	AACT-272-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	AACT-272-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACNB-281-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	ACNB-281-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	ANBE-261-T	-	-	-	-	-	-	-	-	-	-	1	1	:13
	ANBE-261-R	-	-	-	-	-	-	-	-	-	-	1	1	:13
	ANBE-262-T	-	1	-	-	-	-	-	-	-	-	-	1	:30
	ANBE-262-R	-	1	-	-	-	-	-	-	-	-	-	1	:30
	ANBE-263-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	ANBE-263-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	ANBE-264-T	-	2	-	-	-	-	-	-	-	-	-	2	:18
	ANBE-264-R	-	2	-	-	-	-	-	-	-	-	-	2	:18
Canton Island	PCTN-58914-T	-	-	-	-	-	-	-	-	1	-	-	1	:15
Cape Kennedy	PCTN-58914-R	-	9	-	-	2	-	2	-	3	-	-	16	:21
	GCVN-58949-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GCVN-58949-R	-	-	-	-	-	35	-	-	-	-	-	35	:06

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Cape Kennedy	GCPN-58940-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GCPN-58940-R	-	1	-	-	-	35	-	-	-	-	-	36	:09
	GKAP-58938-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	GKAP-58938-R	1	-	-	-	-	-	-	-	-	-	-	1	2:40
	GKEN-58935-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GKEN-58935-R	1	-	-	-	-	35	-	-	-	-	-	36	:10
	GMCC-58936-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMCC-58936-R	1	-	-	-	-	-	-	-	-	-	-	1	2:40
	GMCC-58943-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GMCC-58943-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GMCC-58944-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GMCC-58944-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GMCC-58945-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMCC-58945-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMCC-58947-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMCC-58947-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMCC-58948-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMCC-58948-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GMIL-58950-T	-	3	-	-	-	35	-	-	-	-	-	38	:11
	GMIL-58950-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GMIL-58951-T	-	1	-	-	-	35	-	-	-	-	-	36	:10
	GMIL-58951-R	-	2	-	-	-	35	-	-	-	-	-	37	:11
	GMIL-58995-T	-	1	-	-	-	-	-	-	-	-	-	1	1:00
	GMIL-58995-R	-	1	-	-	-	-	-	-	-	-	-	1	1:00
	GMPA-58941-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GMPA-58941-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GPVE-58942-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GPVE-58942-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
Carnarvon/AADE	JCAP-58937-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JCAP-58937-R	1	-	-	-	-	-	-	-	-	-	-	1	2:40
	ACRO-663-T	-	9	-	-	-	-	-	-	-	-	-	9	1:04
Corpus Christi	ACRO-663-R	-	8	-	-	-	-	-	-	-	-	-	8	:59
	ACRO-664-T	-	9	-	-	-	-	-	-	-	-	-	9	1:04
	ACRO-664-R	-	8	-	-	-	-	-	-	-	-	-	8	1:07
	GTEX-58906-T	-	-	-	-	-	15	-	-	-	-	-	15	:04
	GTEX-58906-R	-	-	-	-	-	15	-	-	-	-	-	15	:04

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POCR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Corpus Christi	GTEX-58907-T	-	2	-	-	-	15	-	-	-	-	-	17	:05
Eglin Air Force Base	GTEX-58907-R	-	-	-	-	-	15	-	-	-	-	-	15	:04
Fort Myers	GEGL-58908-T	-	1	-	-	-	10	-	-	-	-	-	11	:06
	GEGL-58908-R	-	2	-	-	-	10	-	-	-	-	-	12	:10
	GYRS-3302-T	-	8	-	-	-	35	-	-	-	-	-	43	:17
Gilmore Creek	GYRS-3302-R	-	7	-	-	1	35	-	-	-	-	-	43	:18
	GMOR-3077-T	-	5	-	-	-	35	-	-	-	-	-	40	:12
	GMOR-3077-R	-	4	-	-	-	35	-	-	-	-	-	39	:11
	GULA-58930-T	-	1	-	-	-	35	-	-	-	-	-	36	:08
Goldstone	GULA-58930-R	-	1	-	-	-	35	-	-	-	-	-	36	:06
	GGDS-58867-T	-	1	-	-	-	13	-	-	-	-	-	14	:05
	GGDS-58867-R	-	2	-	-	-	13	-	-	-	-	-	15	:29
	GGDS-58868-T	-	1	-	-	-	13	-	-	-	-	-	14	:05
	GGDS-58868-R	-	2	-	-	-	13	-	-	-	-	-	15	:21
/JJPL	JGLD-TK- 1/8-T	-	4	-	-	-	-	-	-	-	1	-	5	1:32
	JGLD-TK- 1/8-R	-	6	-	-	2	-	-	-	-	-	-	8	:58
Grand Bahamas Island	GGBM-58892-T	-	1	-	-	-	-	-	-	-	-	-	1	3:05
Grand Canary I./ LLDN	GGBM-58892-R	-	1	-	-	-	-	-	-	-	-	-	1	:35
	LCYI-58905-T	1	2	-	-	-	-	-	-	1	-	-	3	:08
	LCYI-58905-R	-	5	1	-	-	-	2	-	-	-	-	9	:34
	LCYI-58953-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LCYI-58953-R	-	-	-	-	-	-	-	-	-	-	-	-	-
/Madrid	LCYI-20-T	-	6	-	-	-	-	-	-	-	-	-	6	:28
	LCYI-20-R	-	3	-	-	-	-	-	-	-	-	-	3	1:12
Guam	PGWM-73-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	PGWM-73-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	PGVM-91-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	PGVM-91-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Guaymas	GGYM-58910-T	-	4	-	-	-	35	-	-	-	-	-	39	:11
	GGYM-58910-R	-	4	-	-	-	35	-	-	-	-	-	39	:11
	GGYM-58911-T	-	4	-	-	-	35	-	-	-	-	-	39	:11
	GGYM-58911-R	-	4	-	-	-	35	-	-	-	-	-	39	:11
Honolulu/GSFC	PHON-58829-T	-	1	-	-	-	35	-	-	-	-	-	36	:07
	PHON-58829-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	PHON-58839-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	PHON-58839-R	-	1	-	-	-	35	-	-	-	-	-	36	:06

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Honolulu/GSFC	PHON-58916-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	PHON-58916-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	PHON-58917-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	PHON-58917-R	-	1	-	-	-	35	-	-	-	-	-	36	:06
	PHON-58960-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	PHON-58960-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	PHON-58975-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	PHON-58975-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	PHON-58988-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	PHON-58988-R	-	1	-	-	-	35	-	-	-	-	-	36	:06
Houston	PHON-58989-T	-	1	-	-	-	35	-	-	-	-	-	36	:07
	PHON-58989-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	PHON-58992-T	-	3	-	-	-	35	-	-	-	-	-	38	:10
	PHON-58992-R	-	2	-	-	-	35	-	-	-	-	-	37	:10
	HDMA-58961-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58961-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	HDMA-58962-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58962-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	HDMA-58963-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58963-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	HDMA-58964-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58964-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	HDMA-58965-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58965-R	-	1	-	-	-	35	-	-	-	-	-	35	:06
	HDMA-58971-T	-	-	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58971-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	HDMA-58972-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HDMA-58972-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	HMSC-58959-T	-	1	-	-	-	-	-	-	-	-	-	1	:04
	HMSC-58959-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	HMSC-58966-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HMSC-58966-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	HMSC-58967-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HMSC-58967-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	HMSC-58968-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HMSC-58968-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	HMSC-58970-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
	HMSC-58970-R	-	1	-	-	-	35	-	-	-	-	-	36	:07

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Houston	HMTS-58969-T	-	1	-	-	-	35	-	-	-	-	-	36	:06
Huntsville	HMTS-58969-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GALA-3079-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GALA-3079-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GALA-58954-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	GALA-58954-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
Johannesburg	GBUR-668-T	-	8	-	-	-	-	23	-	38	-	-	69	:39
/AADE	GBUR-668-R	-	8	-	-	-	-	15	-	37	-	-	60	:40
/GSFC	GBUR-3260-T	-	10	-	-	-	35	72	1	12	-	-	130	:37
/LLDN	GBUR-3260-R	-	17	-	-	-	35	61	1	11	-	-	125	:37
	LJOB-18-T	-	9	-	-	-	-	53	1	3	-	-	66	:32
	LJOB-18-R	-	10	-	-	-	-	49	1	3	-	-	63	:29
	LJOB-24-T	-	10	-	-	-	-	56	1	5	-	-	72	:33
	LJOB-24-R	-	12	-	-	-	-	52	1	5	-	-	70	:31
	LJOB-3261-T	-	11	-	-	-	-	59	1	5	-	-	76	:36
	LJOB-3261-R	1	21	-	-	-	-	55	1	5	-	-	83	:29
Kauai Island/ PHON	PHAW-58912-T	-	1	-	-	-	-	-	-	-	-	-	1	:13
	PHAW-58912-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	PHAW-58915-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	PHAW-58915-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Lima	GAPU-58856-T	-	2	-	-	1	35	5	2	2	-	7	54	:30
	GAPU-58856-R	-	4	-	-	1	35	12	-	8	-	7	67	:22
London	LLDN-3261-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-3261-R	-	1	-	-	-	-	-	-	-	-	-	1	:39
	LLDN-3262-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-3262-R	-	1	-	-	-	-	-	-	-	-	-	1	:15
	LLDN-58852-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58852-R	-	3	-	-	-	-	-	-	-	-	-	3	:30
	LLDN-58853-T	-	1	-	-	-	-	-	-	-	-	-	1	:19
	LLDN-58853-R	-	2	-	-	-	-	-	-	-	-	-	2	:18
	LLDN-58854-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58854-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58855-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58855-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58903-T	-	2	-	-	-	-	-	-	-	-	-	2	:34
	LLDN-58903-R	-	2	-	-	-	-	-	-	-	-	-	2	:47
	LLDN-58904-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58904-R	-	-	-	-	-	-	-	-	-	-	-	-	-

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
London	LLDN-58905-T	-	1	-	-	-	-	-	-	-	-	-	1	:55
	LLDN-58905-R	-	2	-	-	-	-	-	-	-	-	-	2	:47
Madrid/GSFC	LLDN-58953-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58953-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	LLDN-58993-T	-	1	-	-	-	-	-	-	-	-	-	1	:55
	LLDN-58993-R	-	3	-	-	-	-	-	-	-	-	-	3	:56
	LRID-3263-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	LRID-3263-R	-	1	-	-	-	35	-	-	-	-	-	36	:06
	LRID-7-T	-	12	-	-	-	-	-	-	-	-	-	13	:45
	LRID-7-R	-	9	1	-	-	-	-	-	-	-	-	11	:54
	LRID-8-T	2	15	2	-	-	-	-	-	-	-	-	18	:39
	LRID-8-R	1	12	1	-	-	-	-	-	-	-	-	14	:28
	LRID-9-T	1	10	-	-	-	-	-	-	-	-	-	11	:36
	LRID-9-R	-	9	-	-	-	-	-	-	-	-	-	9	:16
	LRID-10-T	1	9	-	-	-	-	-	-	-	-	-	10	:42
	LRID-10-R	-	9	-	-	-	-	-	-	-	-	-	9	:16
Pasadena	LRID-11-T	2	15	-	-	-	-	-	-	-	-	-	17	:18
	LRID-11-R	1	10	-	-	-	-	-	-	-	-	-	11	:25
	LRID-13-T	-	3	1	-	1	-	-	-	-	-	-	5	:19
	LRID-13-R	-	2	1	-	-	-	-	-	-	-	-	3	:15
	LRID-14-T	2	4	1	-	-	-	-	-	-	-	-	7	:13
	LRID-14-R	-	2	1	-	-	-	-	-	-	-	-	3	:15
	LRID-16-T	-	10	-	-	-	-	-	-	-	-	-	10	:36
	LRID-16-R	-	6	-	-	-	-	-	-	-	-	-	6	:49
	JJPL-3002-T	-	6	-	-	1	35	-	-	-	-	-	42	:12
	JJPL-3002-R	-	4	-	-	-	35	-	-	-	-	-	39	:10
	JJPL-3006-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-3006-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-3007-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-3007-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-3008-T	-	3	-	-	-	-	-	-	-	-	-	3	1:02
	JJPL-3008-R	-	3	-	-	-	-	-	-	-	-	-	3	1:02
	JJPL-3009-T	-	3	-	-	-	-	-	-	-	-	-	3	1:32
	JJPL-3009-R	-	3	-	-	-	-	-	-	-	-	-	3	1:32
	JJPL-58858-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58858-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58859-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58859-R	-	-	-	-	-	-	-	-	-	-	-	-	-

\*Average duration of interruptions to the nearest minute for January 1967

TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CIRG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Pasadena	JJPL-58860-T	-	-	-	-	1	-	-	-	-	-	-	1	3:51
	JJPL-58860-R	-	-	-	-	1	-	-	-	-	-	-	1	3:51
	JJPL-58861-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58861-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58862-T	-	1	-	-	-	-	-	-	-	-	-	1	:12
	JJPL-58862-R	-	1	-	-	-	-	-	-	-	-	-	1	:12
	JJPL-58863-T	-	-	-	-	1	-	-	-	-	-	-	1	:50
	JJPL-58863-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58921-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58921-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58925-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58925-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58926-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58926-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58927-T	-	-	-	-	-	35	-	-	-	-	-	35	:06
	JJPL-58927-R	-	-	-	-	-	35	-	-	-	-	-	35	:06
Point Arguello	JJPL-58928-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58928-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58929-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58929-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58983-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58983-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Princeton	JJPL-58984-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	JJPL-58984-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GCAL-58922-T	-	3	-	-	-	16	-	-	-	-	-	19	:41
	GCAL-58922-R	-	2	-	-	-	16	-	-	-	-	-	18	:46
	GRGO-58920-T	-	3	-	-	-	16	-	-	-	-	-	19	:32
	GRGO-58920-R	-	4	-	-	-	16	-	-	-	-	-	20	:29
Quito	GHNJ-3300-T	-	2	-	-	-	35	-	-	-	-	-	37	:09
	GHNJ-3300-R	-	1	-	-	-	35	-	-	-	-	-	36	:07
	GJPC-3258-T	-	4	-	1	-	35	-	-	-	-	-	42	21
	GJPC-3258-R	-	3	-	-	1	35	2	-	4	-	-	44	:18
	GQUI-3259-T	-	1	-	-	-	35	1	-	-	-	-	38	:20
	GQUI-3259-R	-	1	-	-	1	35	1	-	4	-	-	42	:16
Rosman	GNAT-3317-T	-	2	-	-	1	35	-	-	-	-	1	39	:27
	GNAT-3317-R	-	2	-	-	1	35	-	-	-	-	1	39	:27
	GROS-3307-T	-	6	-	-	-	35	-	-	-	-	-	41	:47
	GROS-3307-R	-	5	-	-	-	35	-	-	-	-	-	40	:50

\*Average duration of interruptions to the nearest minute for January 1967



TABLE 3 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL INTER- RUPTION	*AVG DURA- TION
Rosman	GRST-3316-T	-	4	-	-	-	35	-	-	-	-	1	40	:26
St. John's	GRST-3316-R	-	9	-	-	-	35	-	-	-	-	1	45	:29
Santiago	GFLD-3250-T	-	3	-	-	-	35	-	-	-	-	-	38	:20
	GFLD-3250-R	-	3	-	-	-	35	-	-	-	-	-	38	:20
	GAGO-3256-T	-	9	-	-	-	35	5	2	1	-	-	52	:25
	CAGO-3256-R	1	13	1	-	4	35	18	3	10	-	-	85	:27
	GEDS-3255-T	-	10	-	-	-	35	5	1	1	-	-	52	:28
	GEDS-3255-R	1	16	1	-	3	35	21	4	12	-	-	93	:32
Tananarive/AADE	LTAN-666-T	-	3	-	-	-	-	2	-	-	-	1	6	2:37
/LLDN	LTAN-666-R	-	5	-	-	-	-	2	-	-	-	1	8	2:06
	LTAN-1-T	-	8	-	-	1	-	19	-	1	-	2	31	1:02
Toowoomba/ACSW	LTAN-1-R	-	9	-	-	2	-	20	-	1	-	2	34	:55
	ACBY-471-T	-	9	-	-	-	-	-	-	-	-	-	9	:39
	ACBY-471-R	-	7	-	-	-	-	-	-	-	-	-	7	:52
	ACBY-472-T	-	9	-	-	-	-	-	-	-	-	-	9	:39
	ACBY-472-R	-	7	-	-	-	-	-	-	-	-	-	7	:52
Wallops Island	GWAB-3305-T	-	2	-	-	-	11	-	-	-	-	-	13	:08
	GWAB-3314-R	-	1	-	-	-	11	-	-	-	-	-	12	:05
	GWAC-3312-R	-	1	-	-	-	11	-	-	-	-	-	12	:05
	GWAC-3313-R	-	1	-	-	-	11	-	-	-	-	-	12	:05
	GWGE-3303-T	-	1	-	-	-	11	-	-	-	-	-	12	:05
	GWGE-3303-R	-	1	-	-	-	11	-	-	-	-	-	12	:05
Washington	NASA-HQ-3309-T	-	-	-	-	-	17	-	-	-	-	-	17	:05
	NASA-HQ-3309-R	-	-	-	-	-	17	-	-	-	-	-	17	:05
White Sands	GWHS-58909-T	-	-	-	-	-	12	-	-	-	-	-	12	:04
	GWHS-58909-R	-	2	-	-	-	12	-	-	-	-	-	14	:08
Winkfield/LLDN	LWNK-58903-T	-	1	-	-	-	-	-	-	-	-	1	2	1:10
Woomera/AADE	LWNK-58903-R	-	1	-	-	-	-	-	-	-	-	1	2	1:10
	AOMJ-561-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	AOMJ-561-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	AOMJ-562-T	-	-	-	-	1	-	-	-	-	-	-	1	:45
	AOMJ-562-R	-	-	-	-	1	-	-	-	-	-	-	1	:45
	AOMJ-563-T	-	-	1	-	-	-	-	-	-	-	-	1	:30
	AOMJ-563-R	-	-	1	-	-	-	-	-	-	-	-	1	:30
TOTALS		18	833	17	1	40	4670	879	20	178	4	28	6688	:20

\*Average duration of interruptions to the nearest minute for January 1967

**TABLE 4**  
**NASCOM Network Teletype Outage Time and**  
**Reliability Indexes for a Period of Six Months**

(Hours and Minutes)

TROUBLE CATEGORIES	AUG 1966	SEP 1966	OCT 1966	NOV 1966	DEC 1966	JAN 1967
A. No Trouble Found	48:45	28:45	3:52	2:07	1:43	11:24
B. Common Carrier	975:06	742:26	749:05	603:35	721:00	738:37
C. Operator Error	15:27	5:54	21:46	8:54	10:01	13:35
D. Equipment Adjustment	1:32	6:12	9:00	22	2:06	:10
E. Equipment Failure	82:34	86:21	82:33	48:21	110:55	35:49
F. CP Failure	551:02	193:19	368:19	569:51	736:39	468:12
G. Poor Propagation	1,503:27	1,188:45	530:34	705:52	864:43	841:14
I. Interference	74:55	49:22	72:45	154:44	80:03	13:46
K. Frequency Change	82:59	115:14	111:08	73:45	69:32	43:11
M. Maintenance	9:24	2:50	22:05	6:17	5:59	3:13
P. Power Failure	41:42	51:39	7:46	12:21	37:23	36:04
TOTAL OUTAGE	3,386:53	2,470:47	1,978:53	2,186:09	2,640:04	2,205:15
SCHED OPER TIME	193,294	194,361	185,014	200,748	159,740	216,826
RELIABILITY (Percent)	98	99	99	99	98	99

**TABLE 5**  
**NASCOM Network Teletype Outage Time**  
**by Months for a Period of One Year**

MONTH	NUMBER OF STATIONS	NUMBER OF CIRCUITS	OUTAGE TIME (Hours and Minutes)	INTERRUPTIONS	AVERAGE DURATION OF INTER- RUPTIONS
Jan (1967)	39	164	2,205:15	6,688	:20
Dec (1966)	40	132	2,640:04	6,476	:24
Nov (1966)	40	156	2,186:09	5,421	:24
Oct (1966)	37	149	1,978:53	5,639	:21
Sep (1966)	37	157	2,470:47	3,937	:38
Aug (1966)	40	162	3,386:53	7,200	:28
Jul (1966)	42	156	2,585:50	3,896	:40
Jun (1966)	41	146	2,900:56	6,898	:25
May (1966)	41	144	5,161:03	6,080	:51
Apr (1966)	44	129	3,093:31	3,778	:49
Mar (1966)	47	126	3,578:05	5,675	:38
Feb (1966)	43	107	2,386:33	6,075	:24

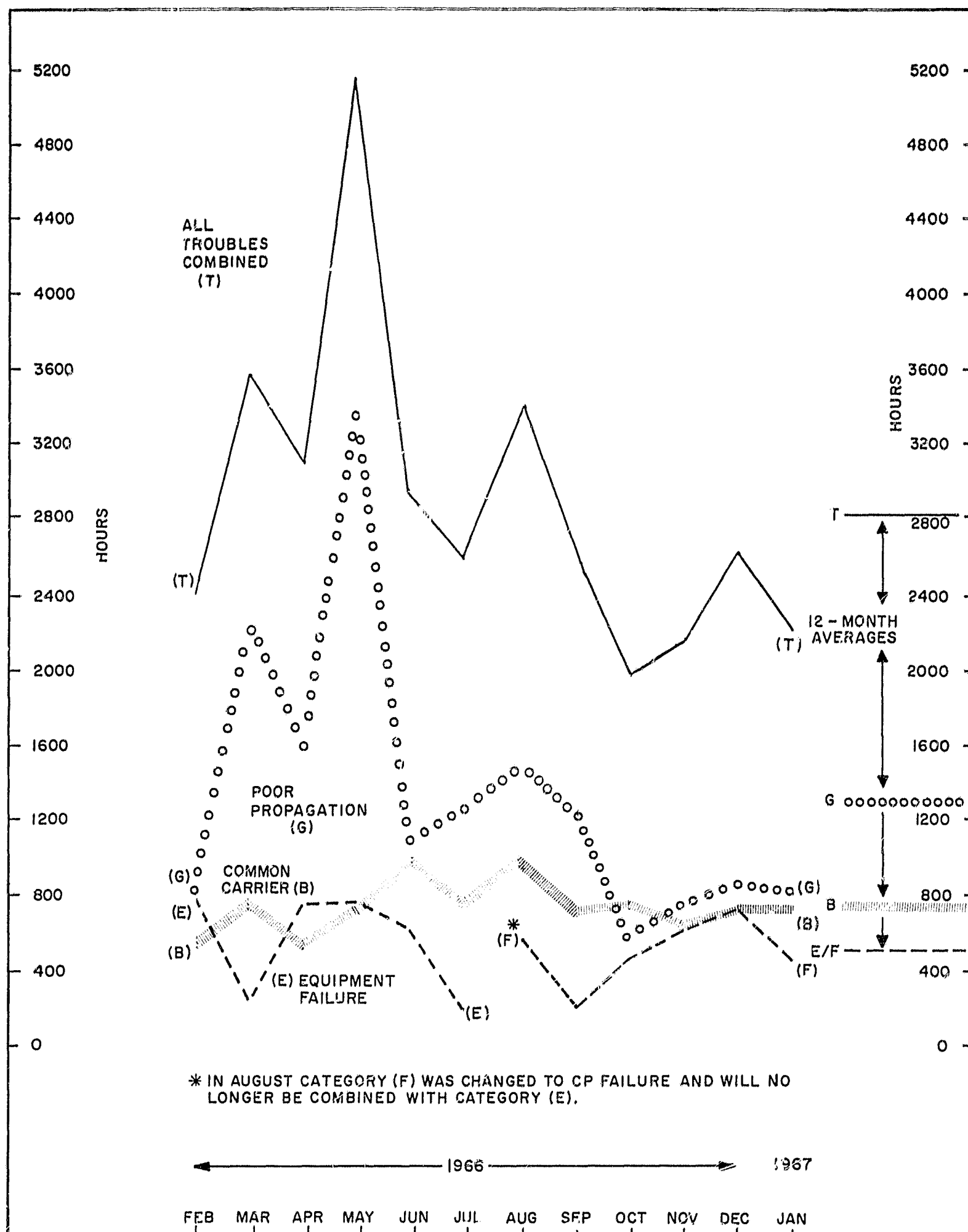


Figure 2. NASCOM Network Teletype Lost Time by Trouble Categories

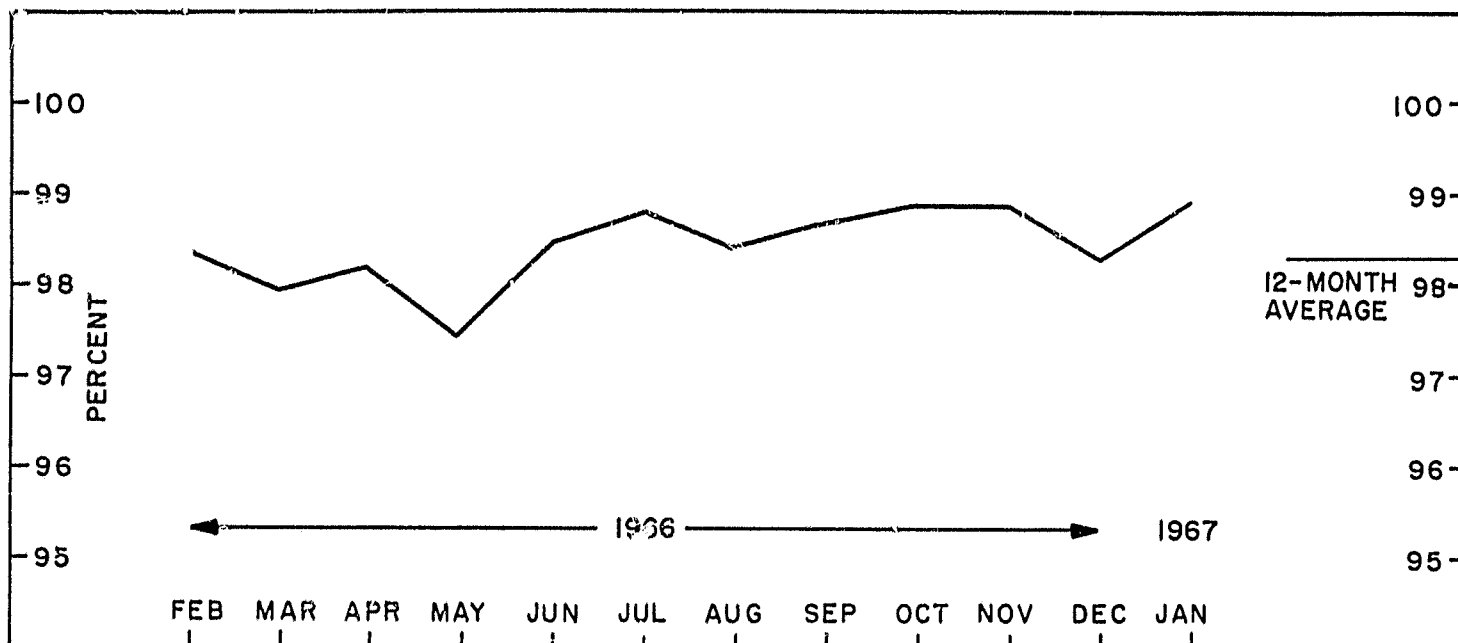


Figure 3. NASCOM Network Teletype Reliability for One Year

## DISCUSSIONS AND ANALYSES OF PERFORMANCE OF INDIVIDUAL TELETYPE STATIONS

### General

This section of the NASCOM Network reliability report examines the performance of the teletype circuits on an individual station/circuit basis. Reliability factors affecting the performance of these individual station/circuits are analyzed in detail. The stations are listed alphabetically and each significant outage is described in the summary of the affected station. In the discussions, outage which totals less than 1:00 hour in a category, or which does not indicate a trend, may be excluded to allow emphasis of pertinent information affecting circuit reliability. Reference should be made to Tables 2 and 3 in the preceding section of the report for a complete list of outages for each station/circuit.

### Individual Station Summaries— NASCOM Network Teletype Circuits

#### ADELAIDE

The AADE/NCT-582 and AADE/NCT-583 circuits had receive path reliabilities of 100 percent and 99 percent, respectively, while the transmit paths of both circuits were 100 percent. Both paths of these circuits were interrupted for 2:25 hours between January 26/27 because of a faulty cable between the Canberra switching center and PMG Canberra. The AADE/NCT-583 circuit experienced one additional, notable outage on January 19/20 when a faulty carrier between Adelaide and Melbourne interrupted the receive path for 2:10 hours.

#### ASCENSION

The reliabilities achieved by the Ascension circuits were 89 percent for GT-58877 and -58879 and 88 percent for GT-58880. These reliabilities were higher than last month with specific improvement of five points for GT-58877 and GT-58879 and seven points for GT-58880. This is due, for the most part, to increased operating hours, 560 hours compared to 430 in December. Significant outages affecting three circuits were due to poor propagation and common carrier troubles. On January 19, equipment trouble at Antigua interrupted the transmit path of GT-58877 for 1:40 hours and the transmit paths

of GT-58879 and GT-58880 for 1:45 hours. A systems failure at Cape Kennedy on January 27 caused the receive path of each circuit to be interrupted for 4:25 hours. On January 30, a faulty channel between Cocoa Beach, Florida and Greenbelt caused an outage of 1:20 hours on the receive path of circuits GT-58877 and GT-58879. Individual path reliabilities and other significant interruptions on the three circuits are discussed in following paragraphs.

The reliability of GSEN/GT-58877 was 91 percent on the transmit path and 86 percent on the receive path. This represents an increase of five percentage points on the transmit and four points on the receive. Total outage due to poor propagation represented 73 percent of total transmit path outage and 82 percent of the total receive path outage. Remaining significant outages were due to common carrier troubles. On January 31, a power failure at Antigua caused a bidirectional outage of 2:20 hours. An interruption on the transmit path for 1:40 hours occurred on each day January 9 and January 19. The first was due to common carrier equipment trouble at Cocoa Beach, Florida while the second was caused by equipment trouble at Antigua.

Circuit GACN/GT-58879 had a transmit and receive path reliability of 91 and 88 percent respectively. This is an improvement over last month's 89 percent transmit and 80 percent receive path reliability. Poor propagation contributed 82 percent of total transmit path outage and 81 percent of total receive path outage. All other notable interruptions resulted from common carrier troubles.

Circuit GACN/GT-58880 achieved 94 percent transmit path and 82 percent receive path reliability. Reliability improvement on each path was ten points for the transmit and four points for the receive. Poor propagation caused 80 and 88 percent of the total outage on the transmit and receive paths respectively. Common carrier outages, in addition to those previously discussed, interrupted the receive path on January 9 and 10. The first, for 1:05 hours, was due to a faulty relay at Cocoa Beach while the second, for 1:15 hours, resulted from low transmitter output at Ascension Island.

#### BARSTOW

Circuit GATS/NST-3005 achieved 99 percent reliability on both paths. On January 16, a common carrier system failure occurred at Richeau Hills, Wyoming interrupting both paths for 2:25 hours.

The transmit and receive paths of GAVE/NST-3001 were 99 percent reliable. A defective tube at the Atlanta Western Union office interrupted the transmit path for 1:20 hours on January 13.

#### CAMBRIDGE

Both paths of GSAO/NST-3308 achieved a reliability of 99 percent. An interruption of 1:00 hour on January 24 affected the receive path when WUT Washington, D. C. adjusted the bias. Equipment troubles at Cambridge affected the transmit path on January 25 and 26 for 1:30 hours and 1:00 hour respectively.

#### CANBERRA

The AACT/NCT-271 circuit had transmit and receive path reliabilities of 100 percent and 99 percent respectively. The receive path was out for an extended period of 7:20 hours January 1 because of a faulty tape transmitter at the site. Maintenance personnel were not readily available due to the failure having occurred on a holiday.

The ACSW/GT-58833 circuit was 98 percent reliable. A major outage, which affected both paths, occurred between January 24/25 for a total of 11:20 hours when a cable failure between ATT San Francisco and WUI San Francisco required 2:10 hours to repair. However, ATT San Francisco failed to inform GSFC that the circuit had been restored until after an additional 9:10 hours had elapsed. Earlier on January 24, the receive path was interrupted for 2:00 hours due to a similar cable fault at San Francisco.

#### CAPE KENNEDY

Circuits GCNV/GT-58949, GMCC/GT-58943, GT-58944, GMPA/GT-58941 and GPVE/GT-58942 failed to achieve the NASCOM reliability standard due to accumulated GSFC CP interruptions.

The GCPN/GT-58940 and GKEN/GT-58935 circuits had transmit and receive path reliabilities of 100 percent and 99 percent respectively. The total outage time accumulated from numerous GSFC CP interruptions was chiefly responsible for the circuits not attaining the NASCOM standard of reliability. Each circuit experienced one significant interruption during the month. The receive path of GCPN/GT-58940 was out for 1:55 hours January 5 due to a faulty channel and repeater between Cocoa Beach, Florida and GSFC. On January 22, the receive path of GKEN/GT-58935 was out for 2:40 hours due to an unreported cause; however, available information indicates that the trouble was at Mission Control, Cape Kennedy.

The transmit paths of the GMIL/GT-58950 and GMIL/GT-58951 circuits were 99 percent reliable while their receive paths were 100 percent and 99 percent respectively. The transmit path of GMIL/GT-58950 was out for 2:15 hours on January 29 because of a line failure between GSFC and Cocoa Beach. Both paths of GMIL/GT-58951 were out for 2:40 hours on January 8. ATT GSFC suspected faulty equipment and a faulty jack, but the actual cause was not determined.

#### CARNARVON

The ACRO/NAT-663 and ACRO/NAT-664 circuits had identical reliabilities of 97 percent on their transmit paths and 98 percent on their receive paths. This decrease from the 100 percent reliabilities achieved last month was caused for the most part by five significant interruptions affecting both circuits. Four of the five interruptions affected both paths. Two of these occurred on January 12 because of equipment malfunctions at Gascoyne Junction, Western Australia. The initial outage of 1:05 hours was caused by a faulty repeater and the second interruption of 1:08 hours was due to a line amplifier failure. On January 25 the circuits were out for 1:48 hours due to low levels on the lines in the Perth area. Line trouble between Mullewa and Gascoyne Junction interrupted the circuits for 2:20 hours on January 31. An outage of undetermined origin caused both transmit paths to fail for 1:45 hours, between Perth and Carnarvon, on January 20. All outages recorded during the month occurred on common carrier facilities.

#### CORPUS CHRISTI

Circuit GTEX/GT-58907 failed to meet the NASCOM reliability standard due mainly to accumulated GSFC CP interruptions.

#### EGLIN AIR FORCE BASE

The transmit and receive paths of GEGL/GT-58908 failed to meet the reliability standard due mainly to an accumulation of CP interruptions.

## FORT MYERS

Circuit GYRS/NST-3302 achieved 98 percent reliability on both paths. On January 14, both paths were interrupted for 4:25 hours due to carrier equipment trouble between Atlanta, Georgia and Tampa, Florida. An interruption, due to common carrier equipment trouble between Tampa and Washington, D. C., for 2:25 hours occurred on January 10 on the receive path. The transmit path was interrupted on January 17 for 1:01 hours due to line trouble between Tampa and Fort Myers.

## GILMORE CREEK

Circuit GMOR/NST-3077 achieved a reliability of 99 percent on both paths. An interruption of 2:25 hours to both paths occurred on January 16 due to a WUT system failure at Richeau Hills, Wyoming. The transmit path was interrupted for 1:00 hours on January 25 due to a carrier equipment failure between Oakland, California and Portland, Oregon.

The reliability of circuit GULA/GT-58930 was 99 percent with one significant common carrier outage during the month. On January 12, the transmit path was out for 1:12 hours due to equipment change at Helena, Montana.

## GOLDSTONE

Circuit GGDS/GT-58867 achieved a transmit path reliability of 99 percent and a receive path reliability of 96 percent. On January 10, the receive path was interrupted for 1:00 hour by a microwave failure at Barstow, California, and, on January 24, the receive path was again interrupted for 5:34 hours due to common carrier equipment trouble between Goldstone and Barstow.

Circuit GGDS/GT-58868 achieved 99 percent reliability on the transmit path and 97 percent reliability on the receive path. On January 10, the receive path was interrupted for 1:00 hour due to a microwave failure at Barstow, California. On January 24 the receive path was interrupted for 3:30 hours due to common carrier equipment trouble between Goldstone and Barstow.

The reliability of circuits GJLD/TK-1/8 was 99 percent. Two significant common carrier interruptions affected both paths. On January 24, an undetermined trouble caused an outage of 2:35 hours and, on January 25 system fading between Goldstone and Pasadena, due to heavy storms, resulted in an outage of 3:55 hours.

## GUAYMAS

The GGYM/GT-58910 and GGYM/GT-58911 circuits were 99 percent reliable. The 3:28 hours of accumulated outage on common carrier facilities and the 3:34 hours of unscheduled GSFC CP interruptions were nearly equal in their responsibility for the total outage time on each circuit. One outage of note occurred during the month. A faulty line between Magdalena and Nogales, Sonora, Mexico caused both circuits to fail for 2:03 hours on January 11.

## HOUSTON

The reliability of both paths of HDMA/GT-58961, HDMA/GT-58962, HDMA/GT-58963, HDMA/GT-58964, HDMA/GT-58965, HDMA/GT-58971, HDMA/GT-58972, HMSC/GT-58966, HMSC/GT-58967, HMSC/GT-58968, HMSC/GT-58969 and HMSC/GT-58970 was 99 percent due primarily to 3:34 hours of accumulated GSFC CP outage.

## HUNTSVILLE

Circuits GALA/NST-3079 and GT-58954 achieved average reliabilities of 100 percent. Both however were slightly below standard because of accumulated CP outage.

## JOHANNESBURG

The GBUR/NAT-668 circuit achieved transmit and receive path reliabilities of 94 percent and 95 percent respectively. This was an improvement over last month of one percentage point on the transmit path and three percentage points on the receive path. A significant outage occurred on January 30 on the transmit path when a channel at Pretoria failed for 3:38 hours. Both paths were out for 1:00 hour January 8 due to a line fault between Perth and Adelaide. The sums of the outages caused by poor propagation and frequency shifts accounted for 83 percent of the total outage on the transmit path and 88 percent of the total outage on the receive path. Outage time charged to common carrier facilities decreased 21 percent on the transmit path and 61 percent on the receive path.

The reliabilities of the GBUR/NST-3260 circuit transmit and receive paths were 89 percent and 90 percent respectively. Two significant outages recorded during the month occurred on the receive path and were caused by equipment malfunctions at Pretoria. On January 28 a faulty FRXD caused an interruption of 1:00 hour and a faulty ARQ pulse supply unit caused an outage of 1:30 hours January 30. Poor propagation and frequency shifts caused 90 percent of the total outage time on the transmit path and 83 percent of the total on the receive path. Outages caused by faulty common carrier facilities decreased 32 percent on the transmit path, but increased 29 percent on the receive path.

The LJOB/NST-3261 circuit had transmit and receive path reliabilities of 94 percent and 95 percent respectively. Three notable common carrier outages occurred during the month. On January 23 the transmit path was out for 4:00 hours because of a faulty speed changer in London. Outages affecting both paths occurred on January 24 for 1:16 hours due to faulty equipment at Pretoria and on January 28 for 1:00 hour due to faulty equipment in London. The sum of the outages due to poor propagation, interference and frequency changes caused 77 percent of the total outage time on the transmit path and 75 percent on the receive path. Outage time caused by common carrier equipment faults increased 27 percent on the transmit path and 17 percent on the receive path.

Both paths of the LJOB/TGP-24 circuit were 95 percent reliable. Two significant common carrier outages occurred on January 28. Both paths were out for 1:00 hour because of faulty common carrier equipment in London and the receive path was out for 1:15 hours because of an equipment failure at Pretoria. Other outages were on January 20 when a wiring problem in London caused an interruption of 1:15 hours on the transmit path and, on January 31, when a line fault at Pretoria caused the receive path to fail for



2:00 hours. The sum of the outages caused by poor propagation, interference and frequency changes caused 85 percent of the total outage time on the transmit path and 79 percent of the receive path total. Total outage time attributable to common carrier facilities showed a decrease of 38 percent on the transmit path and 33 percent on the receive path.

#### MADRID

Circuit LRID/NST-3263 achieved an average reliability of 99 percent caused primarily by interruptions to CP operation.

Both paths of LRID/TGP-7 achieved an average reliability of 98 percent during 494 hours of scheduled operation. Two notable outages affecting both paths were 1:59 hours due to operator error at London on January 13 and 6:05 hours caused by a cable failure between Madrid and the site on January 27.

Circuit LRID/TGP-8 achieved a transmit path reliability of 98 percent and a receive path reliability of 99 percent. On January 20, a carrier failure between the Madrid Test Table and the site caused a transmit path outage of 3:18 hours and a receive path outage of 3:00 hours. Two outages, between London and Madrid affecting only the transmit path, were 3:43 hours on January 27 due to common carrier adjustments and 2:25 hours on January 31 caused by a defective channel.

Circuits LRID/TGP-9 and TGP-10 both achieved reliabilities of 99 percent on the transmit path and 100 percent on the receive path. One notable outage affected the transmit path of both circuits on January 11. This interruption, of 5:20 hours, was the result of unscheduled common carrier maintenance between Madrid and Villalba, Spain.

Both paths of LRID/TGP-11 achieved average reliabilities of 99 percent during 494 hours of scheduled operation. On the transmit path, accumulated common carrier total outage of 4:48 hours represented 96 percent of the total path outage. A notable outage on the receive path, for 2:12 hours on January 12, was caused by high distortion between Paris and Madrid. This, along with numerous other common carrier failures, represented 97 percent of the total receive path outages.

Circuit LRID/TGP-16 achieved a transmit and receive path reliability of 99 percent. All outages on both paths were the result of common carrier problems. The most significant outage, for 3:10 hours on both paths, was caused by a defective channel between Madrid and London on January 13. Faulty carrier equipment between London and Madrid interrupted the transmit path for 1:12 hours on January 26.

#### PASADENA

Both paths of JJPL/NST-3002 and JJPL/NST-3009 achieved a reliability of 99 percent while both paths of JJPL/NST-3008 achieved a reliability of 100 percent. An interruption of 2:25 hours on January 16 affected both paths of these three circuits and was due to a WUT system failure at Richeau Hills, Wyoming. On January 25, both paths of NST-3009 were interrupted for 1:30 hours due to a carrier failure between Los Angeles and Chicago.

Circuit JJPL/GT-58860 achieved a reliability of 99 percent with one significant interruption during the month. On January 20 an equipment failure at Pasadena, resulting from a defective relay, caused an outage of 3:51 hours on both paths.

Circuit JJPL/GT-58927 failed to achieve the NASCOM reliability standard due to accumulated GSFC CP interruptions.

#### POINT ARGUELLO

Circuit GCAL/GT-58922 achieved 94 percent reliability on the transmit and receive paths. On January 25/26, a cable failure between Santa Maria and Vandenberg Air Force Base, California caused outages of 11:24 hours on the transmit path and 13:04 hours on the receive path.

Circuit GRGO/GT-58920 achieved 95 percent reliability on the transmit path and 96 percent reliability on the receive path. The cable failure mentioned above on January 25/26 caused outages of 9:00 hours on the transmit path and 7:20 hours on the receive path.

#### PRINCETON

Circuit GHNJ/NST-3300 achieved a transmit and receive path reliability of 99 percent with one significant interruption during the month. On January 27, a WUT carrier failure at Philadelphia interrupted the transmit path for 1:00 hour.

#### ROSMAN

The circuit reliabilities achieved by the three Rosman circuits were 98 percent for GNAT/NST-3317, 96 percent for GROS/NST-3307 and 97 percent for GRST/NST-3316. One major interruption affected both paths of all circuits on January 27. This outage, for 12:00 hours, was the result of electrical storms in the Rosman area which interrupted the operation of all teletype equipment.

The individual path reliabilities of circuit GNAT/NST-3317 were both 98 percent. An equipment failure, due to a defective relay at Rosman on January 13, interrupted both paths for 1:05 hours.

Path reliabilities for GROS/NST-3307 were 96 percent on the transmit and 95 percent on the receive with the majority of the outages on both paths caused by common carrier troubles. Both paths were interrupted for 10:45 hours on January 12/13 due to common carrier channel trouble between Asheville, North Carolina and Atlanta, Georgia. Two interruptions affecting only the transmit path were, on January 3, when a WUT equipment problem at Rosman caused an outage of 2:34 hours and, on January 10, when a WUT carrier trouble between Charlotte and Asheville resulted in an outage of 3:09 hours. A receive path interruption, of 6:20 hours on January 3, resulted from a defective transmitter-distributor at Rosman.

Circuit GRST/NST-3316 achieved a transmit path reliability of 98 percent and a receive path reliability of 97 percent. Receive path outages include 1:30 hours on January 3 due to WUT equipment trouble at Rosman and 1:00 hour on January 9 caused by a faulty regenerator at WUT Washington, D. C.

#### ST. JOHNS

The transmit path, receive path and circuit reliability of GFLD/NST-3250 were 99 percent. Two notable common carrier interruptions affected both paths. The first, for 1:25 hours on January 17, was caused by loss of "plate battery" supply at the WUT office in Moncton, Canada and the second, for 2:51 hours on January 27, was due to microwave failure at Rimouski, Canada.

#### TOOWOOMBA

The ACBY/NCT-471 and ACBY/NCT-472 circuits were 99 percent reliable. Both circuits were interrupted by two significant outages recorded during the month. The outage of greatest duration, affecting both paths for 2:37 hours, was due to a cable fault between the Canberra switching center and PMG Canberra on January 26. On January 4, the receive paths of these circuits were interrupted for 1:35 hours because of severe electrical storm activity between Brisbane and Sydney.

#### WALLOPS ISLAND

The circuits GWAB/NST-3305-T, GWAB/NST-3314-R, GWAC/NST-3312-R, GWAC/NST-3313-R and GWGE/NST-3303 were 99 percent reliable. Although no significant outages occurred, the circuits failed to meet NASCOM standards. The accumulated outage time of the GSFC CP accounted for 84 percent of the total outage time on all the circuits except GWAB/NST-3305-T where 53 percent of the total outage was caused by faulty common carrier facilities.

#### WASHINGTON

Circuit NASA/NST-3309 was 99 percent reliable, an increase of one percentage point over last month's figure. Accumulated CP outages were the only interruptions to circuit operation.

#### WHITE SANDS

Circuit GWHS/GT-58909 failed to achieve NASCOM reliability standards due to an accumulation of common carrier failures and CP interruptions.

## SUMMARY OF NASCOM NETWORK VOICE/DATA PERFORMANCE ANALYSIS

The operational reliability index of the 193 Voice/Data circuits remained constant at 99 percent. This reliability figure was achieved during 244,312 hours of scheduled operation compared to 242,972 hours during the previous month.

In January, the Voice/Data circuits experienced 2,283:23 hours of lost time which is a decrease of 866:48 hours when compared to the total recorded in December. Five outage categories; Operator Error, Equipment Adjustment, Poor Propagation, Interference and Power Failures increased in lost time over last month's figures. Operator errors increased from 21:10 hours to 52:55 hours. Equipment adjustments increased from 34 minutes in December to 1:59 hours for January. Poor Propagation conditions provided an increase of 67:40 hours over last month's figure of 288:02 hours while interference increased from 3:07 hours to 3:45 hours. The total outage due to power problems, 79:48 hours, was 64:07 hours higher than the preceding month.

Significant improvement occurred in five outage categories. The total outage due to common carrier troubles was down to 1,512:34 hours from 2,303:13 hours, representing a decrease of 790:39 hours. Equipment failures decreased from 296:04 hours to 145:42 hours for a reduction of 150:22 hours. Frequency change outages dropped from 145:51 hours to 121:24 hours, a decrease of 24:27 hours. Maintenance problems dropped from 63:27 hours in December to 8:40 hours in January. Total outage in which no trouble was found dropped from 13:02 hours to 54 minutes.

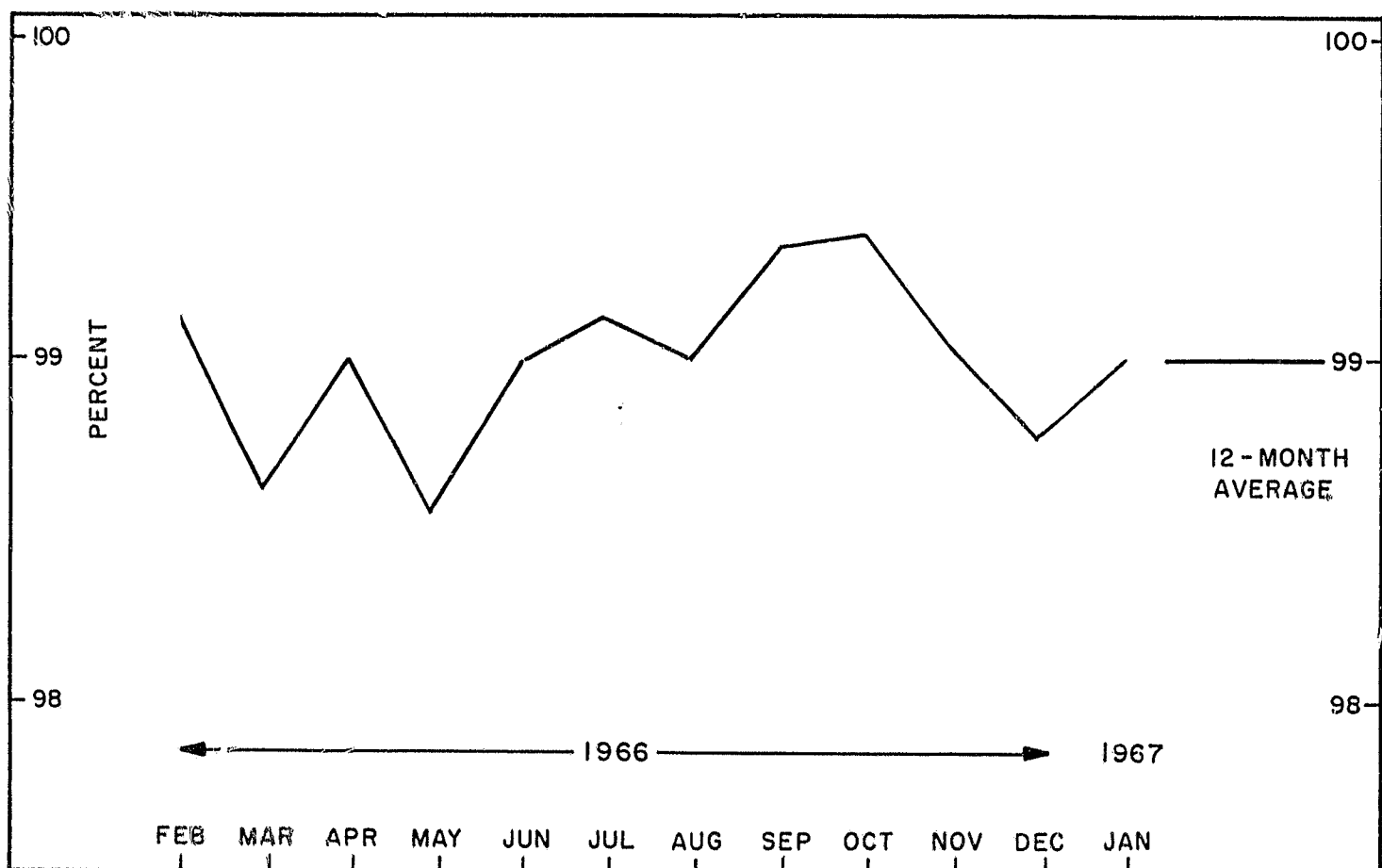


Figure 4. NASCOM Network Voice/Data Reliability for a Period of One Year

**TABLE 6**  
**NASCOM Network Voice/Data Outage Time**  
**and Reliability Indexes for a Period of Six Months**  
(Hours and Minutes)

TROUBLE CATEGORIES	AUG 1966	SEP 1966	OCT 1966	NOV 1966	DEC 1966	JAN 1967
A. No Trouble Found	11:35	2:14	2:00	21:33	13:02	:54
B. Common Carrier	460:05	309:37	409:05	654:28	2,303:13	1,512:34
C. Operator Error	29:48	15:00	11:31	14:10	21:10	52:55
D. Equipment Adjustment	2:37	:14	:34	4:45	:34	1:59
E. Equipment Failure	43:46	53:22	45:18	46:17	296:04	145:42
F. CP Failure	-	-	-	-	-	-
G. Poor Propagation	467:41	260:42	115:38	291:51	288:02	355:42
I. Interference	16:09	6:41	1:48	47:11	3:07	3:45
K. Frequency Change	58:40	58:43	59:30	87:34	145:51	121:24
M. Maintenance	-	-	-	:50	63:27	8:40
P. Power Failure	1:25	5:22	6:47	16:56	15:41	79:48
TOTAL OUTAGE	1,091:46	711:55	652:11	1,185:35	3,150:11	2,283:23
SCHED OPER TIME	109,968	106,566	108,963	122,202	242,972	244,312
RELIABILITY (Percent)	99	99	99	99	99	99

**TABLE 7**  
**NASCOM Network Voice/Data Outage**  
**Time by Months for a Period of One Year**

MONTH	NUMBER OF STATIONS	NUMBER OF CIRCUITS	OUTAGE TIME (Hours and Minutes)	INTERRUPTIONS	AVERAGE DURATION OF INTER- RUPTIONS
Jan (1967)	44	193	2,283:23	1,627	1:24
Dec (1966)	41	195	3,150:11	1,785	1:46
Nov (1966)	46	195	1,185:35	1,279	:56
Oct (1966)	43	174	652:11	928	:42
Sep (1966)	45	172	711:55	1,033	:41
Aug (1966)	45	173	1,091:46	1,116	:59
Jul (1966)	44	163	909:17	1,087	:50
Jun (1966)	44	162	992:34	1,204	:50
May (1966)	43	153	1,347:20	1,148	1:10
Apr (1966)	39	132	845:28	726	1:10
Mar (1966)	42	139	1,131:13	1,195	:57
Feb (1966)	39	127	652:56	613	1:04

TABLE 8

Outage Time by Trouble Categories, Scheduled Operating Hours,  
and Reliability Indexes of Voice/Data Circuits

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
VOICE/DATA															
Adelaide/ Carnarvon	NAV-601-T	-	8:24	-	-	-	-	-	-	-	-	-	8:24	384	98
	-601-R	-	8:29	-	-	-	-	-	-	-	-	-	8:29	384	98
	-602-T	-	8:06	6:15	-	-	-	-	-	-	-	-	14:21	384	96
	-602-R	-	8:23	6:15	-	-	-	-	-	-	-	-	14:38	384	96
Adelaide/ Tanararive	NAV-611-T	-	:25	-	-	-	-	1:19	-	-	-	12:30	14:14	744	98
	-611-R	-	:25	-	-	-	-	1:19	-	-	-	12:30	14:14	744	98
	NAV-511-T	-	-	-	-	-	-	-	-	-	-	-	-	518	100
	-511-R	-	-	-	-	-	-	-	-	-	-	-	-	518	100
Adelaide/ Woomera	-512-T	-	-	-	-	-	-	-	-	-	-	-	-	518	100
	-512-R	-	-	-	-	-	-	-	-	-	-	-	-	518	100
	-513-T	-	-	-	-	-	-	-	-	-	-	-	-	518	100
	-513-R	-	-	-	-	-	-	-	-	-	-	-	-	518	100
Ascension Island	GDA-58560-T	-	7:32	-	-	-	-	1:00	-	-	-	-	8:32	564	98
	-58560-R	-	7:20	-	-	-	-	-	-	-	-	-	7:20	564	99
	NSA-3652-T	-	37:08	-	-	-	-	-	-	-	-	-	37:08	565	93
	-3652-R	-	52:38	-	-	-	-	-	-	-	-	-	52:38	565	91
	-3657-T	-	52:44	-	-	-	-	3:50	-	-	-	-	56:34	565	90
	-3657-R	-	36:05	-	-	-	-	3:50	-	-	-	-	39:55	565	93
	-3658-T	-	59:04	-	-	-	-	-	-	-	-	-	59:04	564	90
	-3658-R	-	-	-	-	-	-	-	-	-	-	-	-	564	100
Barstow	GDA-58452-T	-	5:42	-	-	-	-	-	-	-	-	-	5:42	744	99
	-58452-R	-	3:32	-	-	-	-	-	-	-	-	-	8:26	744	99
	-58672-T	-	2:55	-	-	4:54	-	-	-	-	-	-	15:29	742	98
	-58672-R	-	18:29	-	:57	11:09	-	-	-	-	-	1:25	36:36	742	95
Bermuda	GDA-58280-T	-	:50	-	-	15:45	-	-	-	-	-	-	:50	744	100
	-58280-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58466-T	-	3:15	-	-	-	-	-	-	-	-	-	3:15	743	100
	-58466-R	-	:22	-	-	-	-	-	-	-	-	-	:22	743	100
	-58484-T	-	33:48	-	-	-	-	-	-	-	-	-	33:48	735	95
	-58484-R	-	14:22	-	-	-	-	-	-	-	-	-	14:22	735	98
	-58513-T	-	-	-	-	-	-	-	-	-	-	-	-	651	100
	-58513-R	:03	-	-	-	-	-	-	-	-	-	-	:03	651	100
Canberra/GSFC	-58528-T	-	:27	-	-	-	-	-	-	-	-	-	:27	744	100
	-58528-R	-	:49	-	-	-	-	-	-	-	-	-	:49	744	100
	-58529-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58529-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GDA-58175-T	-	4:12	-	-	-	-	-	-	-	-	-	4:12	743	99
	-58175-R	-	1:08	-	-	:09	-	-	-	-	-	-	1:17	743	100

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Canberra/GSFC	GDA-58449-T	-	1:23	-	-	-	-	-	-	-	-	-	1:23	739	100
	-58449-R	-	9:25	-	-	-	-	-	-	-	-	-	9:25	739	99
	-58475-T	-	3:06	-	-	-	-	-	-	-	-	-	3:06	740	100
	-58475-R	-	5:31	-	-	-	-	-	-	-	-	-	5:31	740	99
	-58518-T	-	:30	-	-	-	-	-	-	-	-	-	:30	744	100
	-58518-R	-	1:26	-	-	-	-	-	-	-	-	-	1:26	744	100
	-58519-T	-	18:40	-	-	-	-	-	-	-	-	-	18:40	743	97
	-58519-R	-	18:40	-	-	-	-	-	-	-	-	-	18:40	743	97
	-58546-T	-	:20	-	-	-	-	-	-	-	-	-	:20	743	100
	-58546-R	-	:40	-	-	-	-	-	-	-	-	-	:40	743	100
	-58547-T	-	4:00	-	-	-	-	-	-	-	-	-	4:00	743	99
	-58547-R	-	1:15	-	-	-	-	-	-	-	-	-	1:15	743	100
	-58548-T	-	:20	-	-	-	-	-	-	-	-	-	:20	744	100
	-58548-R	-	3:35	-	-	-	-	-	-	-	-	-	3:35	744	100
	-58669-T	-	1:42	-	-	-	-	-	-	-	-	-	1:42	744	100
Canberra/ANBE	-58669-R	-	3:22	-	-	-	-	-	-	-	-	-	3:22	744	100
	NCV-201-T	-	-	-	-	-	-	-	-	-	-	2:06	2:06	722	100
	-201-R	-	:09	-	-	-	-	-	-	-	-	2:06	2:15	722	100
	-202-T	-	-	-	-	-	-	-	-	-	-	2:06	3:22	722	100
Canberra/AACF	-202-R	-	-	-	-	-	-	-	-	-	-	2:06	2:06	722	100
	-203-T	-	-	-	-	-	-	-	-	-	-	2:06	2:06	722	100
	-203-R	-	-	-	-	-	-	-	-	-	-	2:06	2:06	722	100
	NCV-211-T	-	-	-	-	-	-	-	-	-	-	2:06	2:06	744	100
Canberra/ACNB	-211-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-212-T	-	54:30	-	-	-	-	-	-	-	-	-	54:30	744	93
	-212-R	-	48:00	-	-	-	-	-	-	-	-	-	48:00	744	94
	NCV-221-T	-	4:03	-	-	-	-	-	-	-	-	-	4:03	678	99
Canberra/ Toowoomba	-221-R	-	4:03	-	-	-	-	-	-	-	-	-	4:03	678	99
	-222-T	-	4:03	-	-	-	-	-	-	-	-	-	4:03	678	99
	-222-R	-	4:03	-	-	-	-	-	-	-	-	-	4:03	678	99
	NCV-425-T	-	2:18	-	-	-	-	-	-	-	-	-	2:18	739	100
Canberra via Sydney	-425-R	-	2:33	-	-	-	-	-	-	-	-	-	2:33	739	100
	NCV-521-T	-	2:20	-	-	-	-	-	-	-	-	-	2:20	744	100
	-521-R	-	2:37	-	-	-	-	-	-	-	-	-	2:37	744	100
	-522-T	-	:36	-	-	-	-	-	-	-	-	-	:36	744	100
Canberra via Melbourne	-522-R	-	1:49	-	-	-	-	-	-	-	-	-	1:49	744	100
	NCV-531-T	-	1:11	-	-	-	-	-	-	-	-	-	1:11	744	100
	-531-R	-	1:11	-	-	-	-	-	-	-	-	-	1:11	744	100
	-532-T	-	:44	-	-	-	-	-	-	-	-	-	:44	744	100
	-532-R	-	:44	-	-	-	-	-	-	-	-	-	:44	744	100

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPR. HOURS	RELIA- BILITY
Jerrra via Melbourne	NCV-533-T	-	2:18	-	-	-	-	-	-	-	-	-	2:18	744	100
	-533-R	-	2:18	-	-	-	-	-	-	-	-	-	2:18	744	100
	-534-T	-	:41	-	-	-	-	-	-	-	-	-	:41	744	100
	-534-R	-	1:32	-	-	-	-	-	-	-	-	-	1:32	744	100
Canberra/ Carnarvon	NCV-631-T	-	25:12	-	-	-	-	-	-	-	-	-	25:12	384	93
	-631-R	-	25:42	-	-	-	-	-	-	-	-	-	25:42	384	93
	-632-T	-	12:28	-	-	-	-	-	-	-	-	-	12:28	384	97
	-632-R	-	15:31	-	-	-	-	-	-	-	-	-	15:31	384	96
	-633-T	-	9:59	-	-	-	-	-	-	-	-	-	9:59	384	97
	-633-R	-	9:59	-	-	-	-	-	-	-	-	-	9:59	384	97
Cape Kennedy	GDA-58283-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58283-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58424-T	-	2:06	-	-	-	-	-	-	-	-	-	2:06	744	100
	-58424-R	-	2:08	-	-	-	-	-	-	-	-	-	2:08	744	100
	-58471-T	-	-	-	-	-	-	-	-	-	-	-	-	742	100
	-58471-R	-	-	-	-	-	-	-	-	-	-	-	-	742	100
	-58472-T	-	:39	-	-	-	-	-	-	-	-	-	:30	744	100
	-58472-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58473-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58473-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58487-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58487-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58488-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58488-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Corpus Christi	-58489-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58489-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58578-T	-	12:18	4:00	-	1:48	-	-	-	-	-	-	1:48	744	100
	-58578-R	-	12:58	4:00	-	-	-	-	-	-	-	-	16:18	741	98
	-58660-T	-	-	-	-	-	-	-	-	-	-	-	16:58	741	98
	-58660-R	-	1:00	-	-	1:00	-	-	-	-	-	-	2:00	736	100
	-58661-T	-	1:02	-	-	-	-	-	-	-	-	-	1:02	739	100
	-58661-R	-	-	-	-	-	-	-	-	-	-	-	-	739	100
	-58662-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	-58662-R	-	1:00	-	-	-	-	-	-	-	:20	-	1:20	743	100
	-58663-T	-	2:07	11:03	-	-	-	-	-	-	-	-	13:10	744	98
	-58663-R	-	-	11:03	-	-	-	-	-	-	-	-	11:03	744	99
	-58671-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58671-R	-	:25	-	-	-	-	-	-	-	-	-	:25	744	100
	GDA-58282-T	-	-	-	-	-	-	-	-	-	-	-	-	226	100
	-58282-R	-	-	-	-	-	-	-	-	-	-	-	-	226	100



TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHET OPER. HOURS	RELIA- BILITY
Corpus Christi	GDA-58403-T	-	-	-	-	-	-	-	-	-	-	-	-	250	100
	-58403-R	-	5:46	1:19	-	-	-	-	-	-	-	-	7:05	250	97
	-58442-T	-	-	-	-	-	-	-	-	-	-	-	-	250	100
	-58442-R	-	-	-	-	-	-	-	-	-	-	-	-	250	100
	-58522-T	-	-	-	-	-	-	-	-	-	-	-	-	250	100
	-58522-R	-	-	-	-	-	-	-	-	-	-	-	-	250	100
	-58633-T	-	21:20	-	-	-	-	-	-	-	-	-	21:20	250	92
	-58633-R	-	-	-	-	-	-	-	-	-	-	-	-	250	100
	GDA-58443-T	-	:45	-	-	-	-	-	-	-	-	-	:45	744	100
	-58443-R	-	:45	-	-	-	-	-	-	-	-	-	:45	744	100
Fort Myers	GDA-58470-T	-	-	-	-	-	-	-	-	-	-	-	26:02	744	97
	-58470-R	-	26:02	-	-	-	-	-	-	-	-	-	27:18	744	96
	GDA-58581-T	-	25:07	-	-	2:11	-	-	-	-	:40	-	1:05	138	99
	-58581-R	-	:25	-	-	-	-	-	-	-	:40	-	1:05	138	99
	-58582-T	-	:25	-	-	-	-	-	-	-	-	-	:25	138	100
	-58582-R	-	:25	-	-	-	-	-	-	-	-	-	:25	138	100
	-58583-T	-	-	-	-	-	-	-	-	-	-	-	-	142	100
	-58583-R	-	-	-	-	-	-	-	-	-	-	-	-	142	100
	-58584-T	-	-	-	-	-	-	-	-	-	-	-	-	142	100
	-58584-R	-	-	-	-	-	-	-	-	-	-	-	-	142	100
Guaymas	-58585-T	-	-	-	-	-	-	-	-	-	-	-	-	142	100
	-58585-R	-	-	-	-	-	-	-	-	-	-	-	-	142	100
	GDA-58422-T	-	8:10	:03	-	-	-	-	-	-	-	-	8:13	735	99
	-58422-R	-	8:10	:03	-	-	-	-	-	-	-	-	8:13	735	99
	-58500-T	-	9:26	:28	-	-	-	-	-	-	-	-	9:54	744	99
	-58500-R	-	8:10	:28	-	-	-	-	-	-	-	-	8:38	744	99
	-58508-T	-	8:10	-	-	-	-	-	-	-	-	-	9:26	729	99
	-58608-R	-	8:10	-	-	-	-	-	-	-	-	-	8:10	729	99
	-58509-T	-	8:42	:03	-	-	-	-	-	-	-	-	8:45	743	99
	-58609-R	-	9:19	:03	-	-	-	-	-	-	-	-	9:22	743	99
Honolulu/GSFC	-58610-T	-	7:41	-	-	-	-	-	-	-	-	-	7:41	743	99
	-58610-R	-	7:41	-	-	-	-	-	-	-	-	-	7:41	743	99
	-58611-T	-	1:16	-	-	-	-	-	-	-	-	-	1:16	743	100
	-58611-R	-	1:53	-	-	-	-	-	-	-	-	-	1:53	743	100
	GDA-58423-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58423-R	-	:14	-	-	-	-	-	-	-	-	-	:14	744	100
	-58544-T	-	4:35	-	-	-	-	-	-	-	-	-	4:35	744	99
	-58544-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58545-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58545-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100

TABLE 8 (Continued)

STATION	CIRCUIT	NC TRBL FND	COM CAP	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Honolulu/GSFC	NSA-3655-T	-	2:33	-	-	-	-	-	-	-	-	-	2:33	738	100
	-3655-R	-	1:23	-	-	-	-	-	-	-	-	-	1:23	738	100
	AGLC-20-T	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	-20-R	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	-40-T	-	-	-	-	-	-	-	-	-	-	-	-	351	100
	-40-R	-	-	-	-	-	-	-	-	-	-	-	-	351	100
	GDA-58525-T	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	-58525-R	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	P-319-T	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	-319-R	-	:36	-	-	-	-	-	-	-	-	-	:36	352	100
Honolulu/Kauai Is.	-320-T	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	-320-R	-	-	-	-	-	-	-	-	-	-	-	-	352	100
	GDA-58284-T	-	2:11	-	-	-	-	-	-	-	-	-	2:11	738	100
	-58284-R	-	1:58	-	-	-	-	-	-	-	-	-	1:58	738	100
	-58444-T	-	:38	-	-	-	-	-	-	-	-	-	:38	738	100
	-58444-R	-	:25	-	-	-	-	-	-	-	-	-	:25	738	100
	-58477-T	-	:38	-	-	-	-	-	-	-	-	-	:38	738	100
	-58477-R	-	13:37	-	-	-	-	-	-	-	-	-	13:37	738	98
	-58579-T	-	:13	-	-	-	-	-	-	-	-	-	:13	744	100
	-58579-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Houston	-58622-T	-	:38	-	-	-	-	-	-	-	-	-	:38	738	100
	-58622-R	-	:25	-	-	-	-	-	-	-	-	-	:25	738	100
	GDA-58191-T	-	2:50	-	-	-	-	-	-	-	-	-	2:50	696	100
	-58191-R	-	2:27	-	-	-	-	-	-	-	-	-	2:27	696	100
	-58192-T	-	2:27	-	-	-	-	-	-	-	-	-	2:27	696	100
	-58192-R	-	2:27	-	-	-	-	-	-	-	-	-	2:27	696	100
	-58281-T	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58281-R	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58293-T	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58293-R	-	-	-	-	-	-	-	-	-	-	-	-	695	100
Lima	-58294-T	-	:23	-	-	-	-	-	-	-	-	-	:23	696	100
	-58294-R	-	1:05	-	-	-	-	-	-	-	-	-	1:05	696	100
	-58295-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58295-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58425-T	-	:48	-	-	-	-	-	-	-	-	-	-	696	100
	-58425-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	GDA-58604-T	:02	:34	:27	:25	-	-	4:50	-	:30	-	:43	7:31	743	99
	-58604-R	-	:34	:27	:37	:18	-	4:50	-	:53	-	:43	8:22	743	99
	GDA-58288-T	-	3:53	-	-	-	-	-	-	-	-	-	3:53	743	99
	-58288-R	-	3:17	-	-	-	-	-	-	-	-	-	3:17	743	100
London/GSFC															

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
London/GSFC	GDA-58433-T	-	1:22	-	-	1:14	-	-	-	-	-	-	2:36	744	100
	-58433-R	-	:15	-	-	-	-	-	-	-	-	-	:15	744	100
	-58434-T	-	-	-	-	:12	-	-	-	-	-	-	:12	743	100
	-58434-R	-	1:04	-	-	2:18	-	-	-	-	-	-	3:22	743	100
	-58499-T	-	-	-	-	20:00	-	-	-	-	-	-	20:00	743	97
	-58499-R	-	:31	-	-	-	-	-	-	-	-	-	:31	743	100
	-58549-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58549-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58605-T	-	:42	-	-	-	-	-	-	-	-	-	:42	744	100
	-58605-R	-	2:06	-	-	-	-	-	-	-	-	-	2:06	744	100
London/Grand Canary Is.	NSA-3656-T	-	10:14	-	-	-	-	-	-	-	-	-	10:14	744	99
	-3656-R	-	16:04	-	-	:14	-	-	-	-	-	-	16:18	744	98
	CYI-1-T	-	-	-	-	-	-	-	-	:06	-	-	:06	195	100
	-1-R	-	-	-	-	-	-	-	-	1:07	-	-	1:07	195	99
	-2-T	-	1:30	-	-	:29	-	-	-	1:33	-	-	3:32	195	98
	-2-R	-	1:30	-	-	:29	-	-	-	1:10	-	-	3:09	195	98
	CMV-40-T	-	5:02	-	-	-	-	-	-	-	-	-	5:02	195	97
	-40-R	:05	-	-	-	-	-	-	-	-	-	-	:05	195	100
	NASA-1-T	:08	4:37	:50	-	:25	-	77:40	-	26:01	-	:07	109:18	744	85
	-1-R	:08	5:08	:50	-	-	-	61:42	:35	23:34	-	:07	92:04	744	88
London/Madrid/ CYI	-2-T	:08	5:54	:20	-	:25	-	69:18	-	25:46	-	:07	101:58	744	86
	-2-R	:08	6:12	:20	-	-	-	63:42	-	23:44	-	:07	94:13	744	87
	DP-1-T	-	2:14	:13	-	:15	-	-	-	-	-	-	2:42	494	99
	-1-R	-	:09	:13	-	:15	-	-	-	-	-	-	:37	494	100
	-2-T	-	13:35	:13	-	-	-	-	-	-	-	-	13:48	494	97
	-2-R	-	10:02	:13	-	-	-	-	-	-	-	-	10:15	494	98
	-3-T	-	9:15	:13	-	-	-	-	-	-	-	-	9:28	494	98
	-3-R	-	9:52	:13	-	-	-	-	-	-	-	-	10:05	494	98
	-4-T	-	10:28	:13	-	-	-	-	-	-	-	-	10:41	494	98
	-4-R	-	2:05	:13	-	-	-	-	-	-	-	-	2:18	494	100
London/ Tanarive Pasadena	-5-T	-	9:58	:13	-	:30	-	-	-	-	-	-	10:41	494	98
	-5-R	-	4:13	:13	-	:30	-	-	-	-	-	-	4:56	494	99
	-6-T	-	20:00	:13	-	:17	-	-	-	-	-	-	20:30	494	96
	-6-R	-	9:16	:13	-	-	-	-	-	-	-	-	9:29	494	98
	LTAN-4-T	:01	33:15	-	-	-	-	27:13	1:35	7:26	-	2:20	71:50	744	90
	-4-R	:01	30:10	-	-	-	-	29:26	1:35	7:26	-	2:20	70:58	744	90
	GDA-58160-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58160-R	-	:35	-	-	-	-	-	-	-	-	-	:35	744	100
	-58167-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58167-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Pasadena	GDA-58186-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	-58186-R	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	-58193-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58193-R	-	5:52	-	-	-	-	-	-	-	-	-	5:52	744	99
	-58194-T	-	-	-	-	:13	-	-	-	-	-	-	:13	744	100
	-58194-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58195-T	-	:50	-	-	-	-	-	-	-	-	-	:50	744	100
	-58195-R	-	:50	-	-	-	-	-	-	-	-	-	:50	744	100
	-58445-T	-	-	-	-	-	-	-	-	-	-	-	-	726	100
	-58445-R	-	-	-	-	-	-	-	-	-	-	-	-	726	100
	-58490-T	-	1:59	-	-	-	-	-	-	-	-	-	1:59	744	100
	-58490-R	-	:11	-	-	-	-	-	-	-	-	-	:11	744	100
	-58491-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58491-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58492-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58492-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58532-T	-	:50	-	-	-	-	-	-	-	-	-	:50	744	100
	-58532-R	-	:50	-	-	-	-	-	-	-	-	-	:50	744	100
	NSA-3653-T	-	40:14	-	-	-	-	-	-	-	-	-	40:14	744	95
Rosman	-3653-R	-	36:01	-	-	-	-	-	-	-	-	-	36:01	744	95
	-3654-T	-	7:01	-	-	-	-	-	-	-	-	-	7:01	744	99
	-3654-R	-	41:29	-	-	-	-	-	-	-	-	-	41:29	744	94
	GDA-58152-T	-	14:42	-	-	1:40	-	-	-	-	-	-	16:22	742	98
	-58152-R	-	14:42	-	-	1:40	-	-	-	-	-	-	16:22	742	98
	-58437-T	-	12:32	-	-	25:00	-	-	-	-	-	-	37:32	744	95
	-58437-R	-	12:32	-	-	25:00	-	-	-	-	-	-	37:32	744	95
	-58448-T	-	15:22	-	-	1:00	-	-	-	-	-	-	16:22	744	98
	-58448-R	-	16:55	-	-	1:00	-	-	-	-	-	-	17:55	744	98
	-58616-T	-	12:32	-	-	-	-	-	-	-	-	-	12:32	744	98
Santiago	-58616-R	-	12:32	-	-	-	-	-	-	-	-	-	12:32	744	98
	GDA-58153-T	:05	1:30	-	-	-	-	1:58	-	:49	-	-	4:22	743	99
	-58153-R	:05	1:21	-	-	-	-	2:59	-	:49	-	-	5:14	743	99
	GDA-58299-T	-	-	-	-	-	-	-	-	-	-	-	-	175	100
Wallops Island	-58299-R	-	-	-	-	-	-	-	-	-	-	-	-	175	100
Total Voice/Data		:54	1425:02	50:53	1:59	122:08	-	354:56	3:45	120:54	1:40	47:00	2,129:11	172,076	99
VOICE FACSIMILE															
Barstow/Suitland	GFA-58486-T	-	14:25	-	-	11:09	-	-	-	-	3:30	16:24	45:28	744	94
Gilmore Creek	-58486-R	-	1:22	-	-	11:09	-	-	-	-	3:30	16:24	32:25	744	96
	GFA-58455-T	-	:35	-	-	-	-	-	-	-	-	-	:35	744	100
	-58455-R	-	1:30	-	-	-	-	-	-	-	-	-	1:30	744	100

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Gilmore Creek	GFA-58456-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58456-R	-	:39	-	-	-	-	-	-	-	-	-	:39	744	100
	-58462-T	-	4:04	-	-	-	-	-	-	-	-	-	4:04	743	99
	-58462-R	-	-	:14	-	-	-	-	-	-	-	-	:14	743	100
	GFA-58460-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Suitland	-58460-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58461-T	-	-	-	-	-	-	-	-	-	-	-	-	742	100
	-58461-R	-	-	-	-	-	-	-	-	-	-	-	-	742	100
	GFA-58453-T	-	-	-	-	-	-	-	-	-	-	-	-	175	100
	-58453-R	-	-	-	-	-	-	-	-	-	-	-	-	175	100
Wallops Island	-58454-T	-	-	-	-	-	-	-	-	-	-	-	-	175	100
	-58454-R	-	-	-	-	-	-	-	-	-	-	-	-	175	100
	Total Voice/Facsimile	-	22:35	:14	-	22:18	-	-	-	-	7:00	32:48	44:55	9,622	99
VOICE ONLY															
Cape Kennedy	GP-58260-T	-	-	-	-	-	-	-	-	-	-	-	-	736	100
	-58260-R	-	-	-	-	-	-	-	-	-	-	-	-	736	100
	-58261-T	-	-	-	-	-	-	-	-	-	-	-	-	737	100
	-58261-R	-	-	-	-	-	-	-	-	-	-	-	-	737	100
	-58408-T	-	-	-	-	-	-	-	-	-	-	-	-	719	100
	-58408-R	-	-	-	-	-	-	-	-	-	-	-	-	719	100
	-58409-T	-	:26	-	-	-	-	-	-	-	-	-	:26	729	100
	-58409-R	-	:26	-	-	-	-	-	-	-	-	-	:26	729	100
	-58410-T	-	1:07	-	-	-	-	-	-	-	-	-	1:07	742	100
	-58410-R	-	1:07	-	-	-	-	-	-	-	-	-	1:07	742	100
	-58411-T	-	4:41	-	-	-	-	-	-	-	-	-	4:41	729	99
	-58411-R	-	4:41	-	-	-	-	-	-	-	-	-	4:41	729	99
	-58412-T	-	-	-	-	-	-	-	-	-	-	-	-	730	100
	-58412-R	-	:13	-	-	-	-	-	-	-	-	-	:13	730	100
	-58413-T	-	-	-	-	-	-	-	-	-	-	-	-	736	100
	-58413-R	-	-	-	-	-	-	-	-	-	-	-	-	736	100
	-58415-T	-	1:24	-	-	-	-	-	-	-	-	-	1:24	735	100
	-58415-R	-	1:24	-	-	-	-	-	-	-	-	-	1:24	735	100
	-58508-T	-	-	-	-	-	-	-	-	-	-	-	-	738	100
	-58508-R	-	-	-	-	-	-	-	-	-	-	-	-	738	100
Eglin AFB	-58681-T	-	-	-	-	-	-	-	-	-	-	-	-	743	100
	-58681-R	-	:38	-	-	-	-	-	-	-	-	-	:38	743	100
	GP-58402-T	-	-	-	-	-	-	-	-	-	-	-	-	202	100
	-58402-R	-	-	-	-	-	-	-	-	-	-	-	-	202	100
	GP-58431-T	-	1:00	:40	-	-	-	-	-	-	-	-	1:40	744	100
Gilmore Creek	-58431-R	-	1:00	:40	-	-	-	-	-	-	-	-	1:40	744	100

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Gilmore Creek Honolulu/ Canton Is. Honolulu/Hickam	GP-58432-T	-	1:00	-	-	-	-	-	-	-	-	-	1:00	744	100
	-58432-R	-	1:00	-	-	-	-	-	-	-	-	-	1:00	744	100
	GP-58473-T	-	:35	-	-	:30	-	-	-	-	-	-	1:05	218	100
	-58478-R	-	:35	-	-	:46	-	:29	-	:15	-	-	2:05	218	99
	GP-58621-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58621-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58665-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58665-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GP-58262-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58262-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
Houston	-58263-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58263-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58464-T	-	:15	-	-	-	-	-	-	-	-	-	:15	691	100
	-58464-R	-	2:33	-	-	-	-	-	-	-	-	-	2:33	691	100
	-58495-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58495-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58496-T	-	-	-	-	-	-	-	-	-	-	-	-	693	100
	-58496-R	-	-	-	-	-	-	-	-	-	-	-	-	693	100
	-58497-T	-	1:02	-	-	-	-	-	-	-	-	-	1:02	696	100
	-58497-R	-	1:02	-	-	-	-	-	-	-	-	-	1:02	696	100
Huntsville	-58507-T	-	-	-	-	-	-	-	-	-	-	-	-	693	100
	-58507-R	-	-	-	-	-	-	-	-	-	-	-	-	693	100
	-58678-T	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58678-R	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58679-T	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58679-R	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58680-T	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58680-R	-	-	-	-	-	-	-	-	-	-	-	-	695	100
	-58681-T	-	-	-	-	-	-	-	-	-	-	-	-	694	100
	-58681-R	-	-	-	-	-	-	-	-	-	-	-	-	694	100
London/Winkfield	GP-58264-T	-	-	-	-	-	-	-	-	-	-	-	-	739	100
	-58264-R	-	-	-	-	-	-	-	-	-	-	-	-	739	100
	-58465-T	-	6:34	-	-	-	-	-	-	-	-	-	6:34	744	99
	-58465-R	-	6:34	-	-	-	-	-	-	-	-	-	6:34	744	99
	PWLR-47229-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-47229-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GP-58266-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58266-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58267-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58267-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Pasadena															

TABLE 8 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Pasadena	GP-58435-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58435-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58476-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58476-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58479-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Point Arguello/ Point Mugu Point Mugu	-58479-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58505-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58505-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58666-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58666-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Point Arguello/ Point Mugu Point Mugu	-58667-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58667-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GP-58405-T	-	12:50	-	-	-	-	-	-	-	-	-	12:50	216	94
	-58405-R	-	12:50	-	-	-	-	-	-	-	-	-	12:50	216	94
	GP-58165-T	-	-	:14	-	-	-	-	-	-	-	-	:14	216	100
Quito	-58165-R	-	-	:14	-	-	-	-	-	-	-	-	:14	216	100
	GP-58150-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58150-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	74GL-59-T	-	-	-	-	-	-	-	-	:15	-	-	:32	744	100
	-59-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Suitland	-60-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-60-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GP-58401-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58401-R	-	-	-	-	-	-	-	-	-	-	-	-	175	100
	-58427-T	-	-	-	-	-	-	-	-	-	-	-	-	175	100
Wallops Island	-58427-R	-	-	-	-	-	-	-	-	-	-	-	-	175	100
	NASA-HQ	-	-	-	-	-	-	-	-	-	-	-	-	175	100
	74GL-95-T	-	-	-	-	-	-	-	-	-	-	-	-	168	100
	-95-R	-	-	-	-	-	-	-	-	-	-	-	-	168	100
	-1967-T	-	-	-	-	-	-	-	-	-	-	-	-	168	100
Washington	-1967-R	-	-	-	-	-	-	-	-	-	-	-	-	168	100
	GP-58404-T	-	-	-	-	-	-	-	-	-	-	-	-	168	100
	-58404-R	-	-	-	-	-	-	-	-	-	-	-	-	168	100
	Total Voice Only	-	64:57	1:48	-	1:16	-	:46	-	:30	-	-	69:17	62,614	100
	Total Network Outage: 2,283:23 hours	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Network Outage: 2,283:23 hours	Total Voice/Data	:54	1425:02	50:53	1:59	122:08	-	354:56	3:45	120:54	1:40	47:00	2,129:11	172,076	
	Total Voice/Facsimile	-	22:35	:14	-	22:18	-	-	-	-	7:00	32.48	84:55	9,622	
	Total Voice Only	-	64:57	1:48	-	1:16	-	:46	-	:30	-	-	69:17	62,614	
Outage Totals		:54	1512:34	52:55	1:59	145:42	-	355:42	3:45	121:24	8:40	79:48	2,283:23	244,312	99

TABLE 9

NASCOM Network Voice/Data Interruptions by Trouble Categories

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POCR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
VOICE/DATA														
Adelaide/Carnarvon  /Tananarive  /Woomera	NAV-601-T	-	4	-	-	-	-	-	-	-	-	-	4	2:06
	-601-R	-	5	-	-	-	-	-	-	-	-	-	5	1:42
	-602-T	-	4	1	-	-	-	-	-	-	-	-	5	2:52
	-602-R	-	4	1	-	-	-	-	-	-	-	-	5	2:56
	NAV-611-T	-	1	-	-	-	-	2	-	-	-	1	4	3:30
	-611-R	-	1	-	-	-	-	2	-	-	-	1	4	3:30
	NAV-511-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-511-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-512-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-512-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascension Island	-513-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-513-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58560-T	-	4	-	-	-	-	1	-	-	-	-	5	1:42
	-58560-R	-	6	-	-	-	-	-	-	-	-	-	6	1:13
	NSA-3652-T	-	2	-	-	-	-	-	-	-	-	-	2	18:34
	-3652-R	-	4	-	-	-	-	-	-	-	-	-	4	13:09
	-3657-T	-	4	-	-	-	-	1	-	-	-	-	5	11:19
	-3657-R	-	4	-	-	-	-	1	-	-	-	-	5	7:59
	-3658-T	-	2	-	-	-	-	-	-	-	-	-	2	28:34
	-3658-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Parstow	GDA-58452-T	-	6	-	-	-	-	-	-	-	-	-	6	1:57
	-58452-R	-	5	-	-	1	-	-	-	-	-	-	6	1:24
	-58672-T	-	2	-	-	1	-	-	-	-	-	1	4	3:52
	-58672-R	-	3	-	1	2	-	-	-	-	-	1	7	5:14
	GDA-58280-T	-	1	-	-	-	-	-	-	-	-	-	1	:50
Bermuda	-58280-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58466-T	-	4	-	-	-	-	-	-	-	-	-	4	:49
	-58466-R	-	1	-	-	-	-	-	-	-	-	-	1	:22
	-58484-T	-	4	-	-	-	-	-	-	-	-	-	4	8:27
	-58484-R	-	2	-	-	-	-	-	-	-	-	-	2	7:11
	-58513-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58513-R	1	-	-	-	-	-	-	-	-	-	-	1	:03
	-58528-T	-	1	-	-	-	-	-	-	-	-	-	1	:27
	-58528-R	-	1	-	-	-	-	-	-	-	-	-	1	:49
	-58529-T	-	-	-	-	-	-	-	-	-	-	-	-	-
Canberra/GSFC	-58529-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58175-T	-	4	-	-	-	-	-	-	-	-	-	4	1:03
	-58175-R	-	3	-	-	1	-	-	-	-	-	-	4	:19



TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Canberra/GSFC	GDA-58449-T	-	2	-	-	-	-	-	-	-	-	-	2	:42
	-58449-R	-	5	-	-	-	-	-	-	-	-	-	5	1:53
	-58475-T	-	5	-	-	-	-	-	-	-	-	-	5	:37
	-58475-R	-	6	-	-	-	-	-	-	-	-	-	6	:55
	-58518-T	-	2	-	-	-	-	-	-	-	-	-	2	:15
	-58518-R	-	4	-	-	-	-	-	-	-	-	-	4	:21
	-58519-T	-	2	-	-	-	-	-	-	-	-	-	2	9:20
	-58519-R	-	2	-	-	-	-	-	-	-	-	-	2	9:20
	-58546-T	-	1	-	-	-	-	-	-	-	-	-	1	:20
	-58546-R	-	2	-	-	-	-	-	-	-	-	-	2	:20
	-58547-T	-	7	-	-	-	-	-	-	-	-	-	7	:34
	-58547-R	-	3	-	-	-	-	-	-	-	-	-	3	:25
	-58548-T	-	1	-	-	-	-	-	-	-	-	-	1	:20
	-58548-R	-	5	-	-	-	-	-	-	-	-	-	5	:43
	-58669-T	-	2	-	-	-	-	-	-	-	-	-	2	:51
	-58669-R	-	5	-	-	-	-	-	-	-	-	-	5	:40
	NCV-201-T	-	-	-	-	-	-	-	-	-	-	-	1	2:06
	-201-R	-	1	-	-	-	-	-	-	-	-	-	1	1:08
	-202-T	-	-	-	-	1	-	-	-	-	-	-	2	1:41
Canberra/ANBE	-202-R	-	-	-	-	-	-	-	-	-	-	-	1	2:06
	-203-T	-	-	-	-	-	-	-	-	-	-	-	1	2:06
	-203-R	-	-	-	-	-	-	-	-	-	-	-	1	2:06
	NCV-211-T	-	-	-	-	-	-	-	-	-	-	-	1	2:06
	-211-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Canberra/A.ACT	-212-T	-	1	-	-	-	-	-	-	-	-	-	1	54:30
	-212-R	-	1	-	-	-	-	-	-	-	-	-	1	48:00
	NCV-221-T	-	1	-	-	-	-	-	-	-	-	-	1	4:03
	-221-R	-	1	-	-	-	-	-	-	-	-	-	1	4:03
	-222-T	-	1	-	-	-	-	-	-	-	-	-	1	4:03
Canberra/ACNB	-222-R	-	1	-	-	-	-	-	-	-	-	-	1	4:03
	NCV-425-T	-	5	-	-	-	-	-	-	-	-	-	5	:28
	-425-R	-	5	-	-	-	-	-	-	-	-	-	5	:31
	NCV-521-T	-	4	-	-	-	-	-	-	-	-	-	4	:35
	-521-R	-	5	-	-	-	-	-	-	-	-	-	5	:31
Canberra/Toowoomba	-522-T	-	1	-	-	-	-	-	-	-	-	-	1	:36
	-522-R	-	3	-	-	-	-	-	-	-	-	-	3	:36
	NCV-531-T	-	2	-	-	-	-	-	-	-	-	-	2	:36
	-531-R	-	2	-	-	-	-	-	-	-	-	-	2	:36
	-532-T	-	1	-	-	-	-	-	-	-	-	-	1	:44
Canberra via Sydney	-532-R	-	1	-	-	-	-	-	-	-	-	-	1	:44
Canberra via Melbourne														

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CA	OPF ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Canberra via Melbourne	NCV-533-T	-	3	-	-	-	-	-	-	-	-	-	3	:46
	-533-R	-	3	-	-	-	-	-	-	-	-	-	3	:46
	-534-T	-	1	-	-	-	-	-	-	-	-	-	1	:41
	-534-R	-	2	-	-	-	-	-	-	-	-	-	2	:46
Canberra / Carnarvon	NCV-631-T	-	7	-	-	-	-	-	-	-	-	-	7	3:36
	-631-R	-	7	-	-	-	-	-	-	-	-	-	7	3:34
	-632-T	-	5	-	-	-	-	-	-	-	-	-	5	2:30
	-632-R	-	7	-	-	-	-	-	-	-	-	-	7	2:13
	-633-T	-	4	-	-	-	-	-	-	-	-	-	4	2:30
	-633-R	-	4	-	-	-	-	-	-	-	-	-	4	2:30
	GDA-58283-T	-	-	-	-	-	-	-	-	-	-	-	-	-
Cape Kennedy	-58283-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58424-T	-	2	-	-	-	-	-	-	-	-	-	2	1:04
	-58424-R	-	2	-	-	-	-	-	-	-	-	-	2	1:04
	-58471-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58471-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58472-T	-	1	-	-	-	-	-	-	-	-	-	1	:30
	-58472-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58473-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58473-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58487-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58487-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58488-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58488-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58489-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58489-R	-	-	-	-	1	-	-	-	-	-	-	1	1:48
	-58578-T	-	3	1	-	-	-	-	-	-	-	-	4	4:05
	-58578-R	-	5	1	-	-	-	-	-	-	-	-	6	2:50
	-58660-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58660-R	-	1	-	-	1	-	-	-	-	-	-	2	1:00
	-58661-T	-	1	-	-	-	-	-	-	-	-	-	1	1:02
	-58661-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Corpus Christi	-58662-T	-	-	-	-	-	-	-	-	-	1	-	-	-
	-58662-R	-	1	-	-	-	-	-	-	-	-	-	2	:40
	-58663-T	-	3	1	-	-	-	-	-	-	-	-	4	3:18
	-58663-R	-	-	1	-	-	-	-	-	-	-	-	1	11:03
	-58671-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58671-R	-	1	-	-	-	-	-	-	-	-	-	1	:25
	GDA-58282-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58282-R	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FR. Q CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Corpus Christi	GDA-58403-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58403-R	-	2	1	-	-	-	-	-	-	-	-	3	2:22
	-58442-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58442-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58522-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58522-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58633-T	-	2	-	-	-	-	-	-	-	-	-	2	10:40
	-58633-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58443-T	-	2	-	-	-	-	-	-	-	-	-	2	:23
	-58443-R	-	2	-	-	-	-	-	-	-	-	-	2	:23
	GDA-58470-T	-	5	-	-	-	-	-	-	-	-	-	5	5:12
	-58470-R	-	3	-	-	2	-	-	-	-	-	-	5	5:28
	GDA-58581-T	-	1	-	-	-	-	-	-	-	1	-	2	:33
	-58581-R	-	1	-	-	-	-	-	-	-	1	-	2	:33
Fort Myers Fort Myers/ Cape Kennedy Goldstone	-58582-T	-	1	-	-	-	-	-	-	-	-	-	1	:25
	-58582-R	-	1	-	-	-	-	-	-	-	-	-	1	:25
	-58583-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58583-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58584-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58584-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58585-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58585-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58422-T	-	3	1	-	-	-	-	-	-	-	-	4	2:03
	-58422-R	-	3	1	-	-	-	-	-	-	-	-	4	2:03
	-58500-T	-	4	2	-	-	-	-	-	-	-	-	6	1:39
	-58500-R	-	3	2	-	-	-	-	-	-	-	-	5	1:44
	-58603-T	-	4	-	-	-	-	-	-	-	-	-	4	2:22
	-58603-R	-	3	-	-	-	-	-	-	-	-	-	3	2:43
Honolulu/GSFC	-58609-T	-	4	1	-	-	-	-	-	-	-	-	5	1:45
	-58609-R	-	5	1	-	-	-	-	-	-	-	-	6	1:34
	-58610-T	-	4	-	-	-	-	-	-	-	-	-	4	1:55
	-58610-R	-	4	-	-	-	-	-	-	-	-	-	4	1:55
	-58611-T	-	1	-	-	-	-	-	-	-	-	-	1	1:16
	-58611-R	-	2	-	-	-	-	-	-	-	-	-	2	:57
	GDA-58423-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58423-R	-	1	-	-	-	-	-	-	-	-	-	1	:14
	-58544-T	-	1	-	-	-	-	-	-	-	-	-	1	4:35
	-58544-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58545-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58545-R	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Honolulu/GSFC	NSA-3655-T	-	3	-	-	-	-	-	-	-	-	-	3	:51
	-3655-R	-	3	-	-	-	-	-	-	-	-	-	3	:28
	AGLC-20-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-20-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-40-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-40-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58525-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58525-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-319-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-319-R	-	2	-	-	-	-	-	-	-	-	-	2	:18
Honolulu/Kauai Island	-320-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-320-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58284-T	-	3	-	-	-	-	-	-	-	-	-	3	:44
	-58284-R	-	2	-	-	-	-	-	-	-	-	-	2	:59
	-58444-T	-	2	-	-	-	-	-	-	-	-	-	2	:19
	-58444-R	-	1	-	-	-	-	-	-	-	-	-	1	:25
	-58477-T	-	2	-	-	-	-	-	-	-	-	-	2	:19
	-58477-R	-	2	-	-	-	-	-	-	-	-	-	2	6:49
	-58579-T	-	1	-	-	-	-	-	-	-	-	-	1	:13
	-58579-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Houston	-58622-T	-	2	-	-	-	-	-	-	-	-	-	2	:19
	-58622-R	-	1	-	-	-	-	-	-	-	-	-	1	:25
	GDA-58191-T	-	2	-	-	-	-	-	-	-	-	-	2	1:25
	-58191-R	-	1	-	-	-	-	-	-	-	-	-	1	2:27
	-58192-T	-	1	-	-	-	-	-	-	-	-	-	1	2:27
	-58192-R	-	1	-	-	-	-	-	-	-	-	-	1	2:27
	-58281-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58281-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58293-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58293-R	-	1	-	-	-	-	-	-	-	-	-	1	:23
Lima	-58294-T	-	1	-	-	-	-	-	-	-	-	-	1	1:05
	-58294-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58295-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58295-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58425-T	-	2	-	-	-	-	-	-	-	-	-	3	:27
	-58425-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58604-T	1	1	2	1	-	-	4	-	2	-	8	19	:24
	-58604-R	-	1	2	1	-	-	4	-	7	-	8	23	:20
	GDA-58288-T	-	6	-	-	-	-	-	-	-	-	-	6	:39
	-58288-R	-	4	-	-	-	-	-	-	-	-	-	4	:49

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
London/GSFC	GDA-58433-T	-	2	-	-	1	-	-	-	-	-	-	3	:52
	-58433-R	-	1	-	-	-	-	-	-	-	-	-	1	:15
	-58434-T	-	-	-	-	1	-	-	-	-	-	-	1	:12
	-58434-R	-	2	-	-	1	-	-	-	-	-	-	3	1:07
	-58499-T	-	-	-	-	1	-	-	-	-	-	-	1	20:00
	-58499-R	-	1	-	-	-	-	-	-	-	-	-	1	:31
	-58549-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58549-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58605-T	-	1	-	-	-	-	-	-	-	-	-	1	:42
	-58605-R	-	1	-	-	-	-	-	-	-	-	-	1	2:06
	NSA-3656-T	-	7	-	-	-	-	-	-	-	-	-	7	1:28
	-3656-R	-	9	-	-	1	-	-	-	-	-	-	10	1:38
	CYI-1-T	-	-	-	-	-	-	-	-	2	-	-	2	:03
	-1-R	-	-	-	-	-	-	-	-	20	-	-	20	:03
London/Grand Canary Is.	-2-T	-	1	-	-	1	-	-	-	18	-	-	20	:11
	-2-R	-	1	-	-	1	-	-	-	22	-	-	24	:08
	CMV-40-T	-	5	-	-	-	-	-	-	-	-	-	5	1:00
London/Madrid/CYI	-40-R	-	-	-	-	-	-	-	-	-	-	-	1	:05
	NASA-1-T	1	7	-	-	1	-	62	-	123	-	1	192	:33
London/Johannesburg	-1-R	2	9	3	-	-	-	54	-	106	-	1	176	:31
	-2-T	2	8	2	-	1	-	59	-	122	-	1	195	:31
	-2-R	2	8	2	-	-	-	54	-	105	-	1	172	:33
	DP-1-T	-	2	1	-	1	-	-	-	-	-	-	4	:41
London/Madrid	-1-R	-	1	1	-	1	-	-	-	-	-	-	3	:12
	-2-T	-	6	1	-	-	-	-	-	-	-	-	7	1:58
	-2-R	-	5	1	-	-	-	-	-	-	-	-	6	1:43
	-3-T	-	6	1	-	-	-	-	-	-	-	-	7	1:21
	-3-R	-	6	1	-	-	-	-	-	-	-	-	7	1:26
	-4-T	-	4	1	-	-	-	-	-	-	-	-	5	2:08
	-4-R	-	2	1	-	-	-	-	-	-	-	-	3	:46
	-5-T	-	4	1	-	2	-	-	-	-	-	-	7	1:32
	-5-R	-	3	1	-	2	-	-	-	-	-	-	6	:49
	-6-T	-	7	1	-	1	-	-	-	-	-	-	9	2:17
	-6-R	-	8	1	-	-	-	-	-	-	-	-	9	1:03
	LTAN-4-T	1	10	-	-	-	-	27	1	24	-	1	64	1:07
London/Tananarive	-4-R	1	7	-	-	-	-	29	1	24	-	1	63	1:08
	GDA-58160-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58160-R	-	1	-	-	-	-	-	-	-	-	-	1	:35
	-58167-T	-	-	-	-	-	-	-	-	-	-	-	-	-
Pasadena	-58167-R	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PUR FAIL	TOTAL	AVC DURA- TION
Pasadena	GDA-58186-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58186-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58193-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58193-R	-	1	-	-	-	-	-	-	-	-	-	1	5:52
	-58194-T	-	-	-	-	1	-	-	-	-	-	-	1	:13
	-58194-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58195-T	-	1	-	-	-	-	-	-	-	-	-	1	:50
	-58195-R	-	1	-	-	-	-	-	-	-	-	-	1	:50
	-58445-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58445-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58490-T	-	2	-	-	-	-	-	-	-	-	-	2	1:00
	-58490-R	-	1	-	-	-	-	-	-	-	-	-	1	:11
	-58491-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58491-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58492-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58492-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58532-T	-	1	-	-	-	-	-	-	-	-	-	1	:50
	-58532-R	-	1	-	-	-	-	-	-	-	-	-	1	:50
	NSA-3653-T	-	10	-	-	-	-	-	-	-	-	-	10	4:01
	-3653-R	-	7	-	-	-	-	-	-	-	-	-	7	5:09
	-3654-T	-	4	-	-	-	-	-	-	-	-	-	4	1:45
	-3654-R	-	2	-	-	-	-	-	-	-	-	-	2	20:45
Rosman	GDA-58152-T	-	4	-	-	2	-	-	-	-	-	-	6	2:44
	-58152-R	-	4	-	-	2	-	-	-	-	-	-	6	2:44
	-58437-T	-	2	-	-	2	-	-	-	-	-	-	4	9:23
	-58437-R	-	2	-	-	2	-	-	-	-	-	-	4	9:23
	-58448-T	-	4	-	-	1	-	-	-	-	-	-	5	3:16
	-58448-R	-	5	-	-	1	-	-	-	-	-	-	6	2:59
	-58616-T	-	2	-	-	-	-	-	-	-	-	-	2	6:16
	-58616-R	-	2	-	-	-	-	-	-	-	-	-	2	6:16
	GDA-58153-T	1	3	-	-	-	-	5	-	3	-	-	12	6:13
	-58153-R	1	2	-	-	-	-	6	-	3	-	-	12	:22
Santiago	GDA-58299-T	-	-	-	-	-	-	-	-	-	-	-	-	:26
	-59299-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Voice/Data		15	538	41	4	39	-	311	3	581	3	32	1537	1:22
VOICE FACSIMILE														
Barstow/Suitland	GFA-58486-T	-	5	-	-	1	-	-	-	-	1	2	9	5:03
	-58486-R	-	2	-	-	1	-	-	-	-	1	2	6	5:24
Gilmore Creek	GFA-58455-T	-	1	-	-	-	-	-	-	-	-	-	1	:35
	-58455-R	-	2	-	-	-	-	-	-	-	-	-	2	:45

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Gilmore Creek	GFA-58456-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58456-R	-	2	-	-	-	-	-	-	-	-	-	2	:20
	-58462-T	-	1	-	-	-	-	-	-	-	-	-	1	4:04
	-58462-R	-	-	1	-	-	-	-	-	-	-	-	1	:14
Suitland	GFA-58460-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58460-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58461-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58461-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Wallops Island	GFA-58453-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58453-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58454-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58454-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Voice/Facsimile		-	13	1	-	2	-	-	-	-	2	4	22	3:32
VOICE ONLY														
Cape Kennedy	GP-58260-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58260-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58261-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58261-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58408-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58408-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58409-T	-	1	-	-	-	-	-	-	-	-	-	1	:26
	-58409-R	-	1	-	-	-	-	-	-	-	-	-	1	:26
	-58410-T	-	1	-	-	-	-	-	-	-	-	-	1	1:07
	-58410-R	-	1	-	-	-	-	-	-	-	-	-	1	1:07
	-58411-T	-	1	-	-	-	-	-	-	-	-	-	1	4:41
	-58411-R	-	1	-	-	-	-	-	-	-	-	-	1	4:41
	-58412-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58412-R	-	1	-	-	-	-	-	-	-	-	-	1	:13
	-58413-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58413-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58415-T	-	1	-	-	-	-	-	-	-	-	-	1	1:24
	-58415-R	-	1	-	-	-	-	-	-	-	-	-	1	1:24
Eglin AFB	-58508-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58508-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58681-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58681-R	-	1	-	-	-	-	-	-	-	-	-	1	:38
Gilmore Creek	GP-58402-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58402-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GP-58431-T	-	1	-	-	-	-	-	-	-	-	-	2	:50
	-58431-R	-	1	1	-	-	-	-	-	-	-	-	2	:50

TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POGR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Gilmore Creek	GP-58432-T	-	1	-	-	-	-	-	-	-	-	-	1	1:00
	-58432-R	-	1	-	-	-	-	-	-	-	-	-	1	1:00
	GP-58478-T	-	1	-	-	1	-	-	-	-	-	-	2	:33
	-58478-R	-	1	-	-	3	-	1	-	1	-	-	6	:21
Honolulu/Canton Island	GP-58621-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58621-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58665-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58665-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Honolulu/Hickam	GP-58262-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58262-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58263-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58263-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Houston	-58464-T	-	1	-	-	-	-	-	-	-	-	-	1	:15
	-58464-R	-	1	-	-	-	-	-	-	-	-	-	1	2:33
	-58495-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58495-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58496-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58496-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58497-T	-	2	-	-	-	-	-	-	-	-	-	2	:31
	-58497-R	-	2	-	-	-	-	-	-	-	-	-	2	:31
	-58507-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58507-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58678-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58678-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58679-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58679-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58680-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58680-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58681-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58681-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GP-58264-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58264-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Huntsville	-58465-T	-	1	-	-	-	-	-	-	-	-	-	-	6:34
	-58465-R	-	1	-	-	-	-	-	-	-	-	-	1	6:34
	PWLR-47229-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-47229-R	-	-	-	-	-	-	-	-	-	-	-	-	-
London/Winkfield	GP-58266-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58266-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58267-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58267-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Pasadena	-58267-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58267-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58267-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58267-R	-	-	-	-	-	-	-	-	-	-	-	-	-



TABLE 9 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENC	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
Pasadena	GP-58435-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58435-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58476-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58476-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58479-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58479-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58505-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58505-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58666-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58666-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58667-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58667-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GP-58405-T	-	1	-	-	-	-	-	-	-	-	-	1	12:50
	-58405-R	-	1	-	-	-	-	-	-	-	-	-	1	12:50
Point Arguello/ Point Mugu Point Mugu	GP-58165-T	-	-	1	-	-	-	-	-	-	-	-	1	:14
	-58165-R	-	-	1	-	-	-	-	-	-	-	-	1	:14
	GP-58150-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58150-R	-	-	-	-	-	-	1	-	-	-	-	2	:16
Suitland	74GL-59-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-59-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-60-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-60-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Wallops Island	GP-58401-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58401-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58427-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58427-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington	NASA-HQ	-	-	-	-	-	-	-	-	-	-	-	-	-
	74GL-95-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-95-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-1967-T	-	-	-	-	-	-	-	-	-	-	-	-	-
White Sands	-1967-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GP-58404-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58404-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Voice Only		-	26	4	-	4	-	2	-	2	-	-	38	1:49
Total Network Interruptions: 1,627														
Total Voice/Data		15	538	41	4	39	-	311	3	581	3	32	1,567	
Total Voice/Facsimile		-	13	1	-	2	-	-	-	-	2	4	22	
Total Voice Only		-	26	4	-	4	-	2	-	2	-	-	38	
Interruption Totals		15	577	46	4	45	-	313	3	583	5	36	1,627	1:24

## SPECIFIC PROBLEMS

### ADELAIDE/CARNARVON

Circuit NAV-601 achieved 98 percent reliability on both paths. Two common carrier interruptions of significance affected both paths: the first, on January 12/13 for 5:50 hours, occurred at Gascoyne Junction, Western Australia due to a faulty amplifier in the repeater and the second, on January 27 for 1:14 hours, when carrier equipment failed between Adelaide and Carnarvon, Australia.

The reliability of circuit NAV-602 was 96 percent with both paths affected by three notable common carrier interruptions. On January 12/13, a 5:50 hours interruption occurred due to a faulty amplifier in the repeater at Gascoyne Junction, Western Australia. The circuit was improperly switched from the voice mode to the data mode at the Carnarvon site which resulted in a 6:15 hours interruption on January 20/21. On January 27, a carrier equipment failure between Melbourne and Perth, Australia interrupted the circuit for 1:31 hours.

### ASCENSION ISLAND

The reliabilities of the Ascension Island circuits were 92 percent for NSA-3652, 91 percent for NSA-3657 and 95 percent for NSA-3658. Notable common carrier interruptions affected more than one circuit. On January 16/17 the transmit paths of NSA-3657 and -3658 were interrupted for 27:39 hours due to an unspecified trouble at San Juan, Puerto Rico. Both paths of NSA-3652 were interrupted for 8:09 hours and both paths of NSA-3657 for 8:10 hours by a carrier fault between WUT Miami and WUT Washington on January 31 with these outages continuing into February. Earlier on January 31, the receive path of NSA-3652 was interrupted for 11:05 hours and the receive path of NSA-3657 for 11:00 hours by a microwave failure between Ramey Air Force Base and Antigua. Individual path reliabilities and related significant outages are discussed below.

Circuit NSA-3652 achieved a transmit and receive path reliability of 93 and 91 percent, respectively, with all interruptions due to common carrier troubles. On January 8/9, both paths were interrupted for 28:59 hours due to the circuit being out of specifications. Equipment trouble at San Juan caused a receive path interruption of 4:25 hours on January 27.

The transmit and receive paths of NSA-3657 were 90 percent and 93 percent reliable respectively. Both paths were interrupted on January 12/13 for 9:20 hours with the transmit path restored by amplifier adjustment at WUI Miami and the receive path by insertion of an attenuator pad at WUT Washington. An undetermined trouble between WUI Miami and San Juan on January 26 caused an interruption of 7:35 hours on both paths. Poor propagation interrupted both paths for 3:50 hours on January 25.

On circuit NSA-3658, the transmit path was 90 percent reliable while the receive path was 100 percent. All outages were due to common carrier troubles and affected only the transmit path. Between January 12 and 14, the transmit path was interrupted for 31:25 hours as a result of a defective WUI cable at San Juan.

## BARSTOW

Circuit GDA-58452 was 99 percent reliable on both the transmit and receive paths. The transmit path was interrupted on January 24 for 2:10 hours because of a faulty repeater at San Bernardino, California. A faulty cable protector at the site on January 25 caused 4:54 hours of outage on the receive path. A common carrier failure at Barstow, California on January 31 affected both paths for 1:20 hours.

The reliability of circuit GFA-58486 was 94 percent on the transmit path and 96 percent on the receive path. Both paths were interrupted for 11:09 hours on January 18/19 due to an equipment problem at the site. This outage also affected circuit GDA-58672. Two power failures at the site on January 23/24 caused 16:24 hours total downtime with both paths affected. Unauthorized maintenance at the site on January 26 resulted in 3:30 hours of lost time on the transmit and receive paths. On January 23, the transmit path was interrupted for 12:15 hours because of a common carrier failure at Lane Mountain, California.

The GDA-58672 circuit was 98 percent reliable on the transmit path and 95 percent on the receive path. The outage of 11:09 hours was discussed above under the GDA-58486 circuit write up. On January 23, both paths were out for 1:25 hours because of a power failure at the site and the outage continued on the receive path for an additional 12:30 hours due to a microwave problem at Lane Mountain, California. The transmit path experienced 2:11 hours of common carrier failure at San Bernardino on January 24. On January 6 the receive path was out for 4:36 hours due to faulty cable protectors at the site. An additional receive path outage of 5:15 hours duration on January 16 was caused by a common carrier equipment failure at Mojave, California.

## BERMUDA

The circuit GDA-58484 was 95 percent reliable on the transmit path and 98 percent on the receive path. All outages on both paths were caused by common carrier troubles. Both paths were interrupted for 5:12 hours on January 20 by an undetermined trouble and for 9:10 hours on January 25/26 by a faulty amplifier at Miami, Florida. The transmit path was interrupted for 9:43 hours on January 24/25 due to a wiring error in the repeater at WUI, Miami.

## CANBERRA

The GDA-58519 circuit was only 97 percent reliable due to two common carrier interruptions affecting both paths. A major outage of 17:10 hours occurred on January 13 because the circuit required realigning on all of its segments between GSFC and Canberra. The circuit was out for 1:30 hours January 4 because of equipment trouble at RCA San Francisco.

The Canberra/AACT NCV-212 circuit transmit and receive paths improved in reliability to 93 and 94 percent from their respective levels of 80 and 90 percent last month. The transmit path, that had accumulated an outage of 143:30 hours at the end

of last month, was out until January 3 for an additional 54:30 hours before installation of a new section of cable was completed between Canberra and the site. After the cable was restored the level on the receive path was observed to vary because of fallen trees that had not been removed from the lines. Between January 3/5 the receive path accumulated 48 hours of outage before full service was restored. No outages were recorded on the circuit after January 5 through the end of the month.

The Canberra/Apollo NCV-221 and NCV-222 circuits had identical reliabilities of 99 percent. The only interruption recorded during the month occurred on January 18 when PMG Canberra performed line maintenance on both paths of each circuit for a period of 4:03 hours.

#### CAFE KENNEDY

Circuit GDA-58578 had a reliability of 98 percent on both paths. Three significant common carrier troubles affected both paths with high error rate causing outages on two separate occasions. The first, on January 20/21, was an interruption of 6:35 hours while another, on January 25, was for 4:38 hours. An outage occurring on January 24 caused two separate interruptions for a total outage of 5:05 hours. The first interruption, for 4:00 hours, was charged to operator error in performing a "lock back" at Merritt Island while the second, for 1:05 hours, was attributed to an undetermined ATT trouble at Merritt Island.

GDA-58663 achieved 98 percent reliability on the transmit path and 99 percent reliability on the receive path. On January 9, an interruption on the transmit path for 1:02 hours occurred due to faulty carrier equipment between Waldorf, Maryland and Rockdale, Georgia. An 11:03 hours outage due to operator error at Merritt Island, Florida occurred on January 29/30 and affected both paths.

Circuit GP-58411 achieved 99 percent reliability on both paths. A common carrier equipment failure between Washington, D. C. and Jacksonville, Florida interrupted both paths for 4:41 hours on January 14/15.

#### CARNARVON

The combined path reliability of the circuit NCV-631 was 93 percent while the NCV-632 was 96 percent and NCV-633 was 97 percent. Both paths of these three circuits were out for 5:50 hours between January 12/13 because of a faulty line amplifier at Gascoyne Junction, Western Australia. Other interruptions that affected both paths include the 15:37 hours of carrier failure at Perth on NCV-631 between January 23/24; the 1:58 hours that the NCV-632 and NCV-633 circuits were out due to a system failure between Perth and Kalgoorlie on January 23; the carrier failure between Melbourne and Perth on January 27 that affected NCV-632 for 3:30 hours and NCV-633 for 1:31 hours and the 1:40 hours of outage on NCV-631 January 31 due to a mismatch at Perth. A significant outage occurred on the receive path of NCV-632 on January 20 for 2:35 hours due to a low line level at Perth.

## CORPUS CHRISTI

Circuit GDA-58403 achieved a transmit path reliability of 100 percent and a receive path reliability of 97 percent. Two common carrier failures affected the receive path for 5:46 hours. On January 16, an interruption of 1:21 hours was caused by level adjustments at Corpus Christi and, on January 31, a faulty carrier between Atlanta and Washington resulted in an outage of 4:25 hours. An operator error at the site on January 26 caused 1:19 hours of outage on the receive path.

Circuit GDA-58633 was 92 percent reliable on the transmit path and 100 percent on the receive path with common carrier troubles on the transmit path responsible for the entire 21:20 hours of total outage. The most significant outage, for 20:35 hours, occurred between January 13 and 17 in Texas and was charged to ATT. Since the site was closed on January 14/15, personnel were unable to work on the circuit and ATT was not charged for this time.

## FORT MYERS

The transmit and receive paths of GDA-58470 were 97 percent and 96 percent reliable respectively. The most significant outage was of 24:00 hours duration between January 5/6 when both paths experienced high noise levels. Although the actual cause was not reported, service was restored by placing the circuit on an alternate route between Miami and Fort Myers. The receive path was out for 1:21 hours January 14 due to faulty equipment at the site.

## GOLDSTONE

Circuit GDA-58581 achieved 99 percent reliability during 137:39 hours of scheduled operation and did not meet NASCOM standard due to an accumulation of minor interruptions.

## GUAYMAS

The individual path reliabilities of circuits GDA-58422, -58500, -58608, -58609 and -58610 were 99 percent. Two notable common carrier troubles, between Nogales, Arizona and Magdalena, Mexico, interrupted both paths of all five circuits on January 11. The first trouble, due to carrier failure, interrupted circuits GDA-58422, -58500, -58608, and -58609 for 2:03 hours and circuit GDA-58610 for 1:16 hours. The second problem, due to defective lines, interrupted the circuits for 5:17 hours. A third significant outage affected the transmit path of circuits GDA-58500 and -58608 for 1:16 hours on January 10 and was corrected by level adjustments at Tucson, Arizona.

## HUNTSVILLE

An undetermined ATT trouble at Huntsville, interrupting both paths of GP-58465 for 6:34 hours on January 24, resulted in a bidirectional reliability of 99 percent.

## JOHANNESBURG

The reliability of the NASA-1 circuit was 85 percent on the transmit path and 88 percent on the receive path. The radio path between London and the site accounted for 94 percent of the total outage on the transmit path and 93 percent on the receive path. Both

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paths were interrupted on January 16 for 2:58 hours because of landline problems between the site and Pretoria. The outage also affected the NASA-2 circuit but for 4:08 hours in duration.

The transmit and receive path reliabilities of the NASA-2 circuit were 86 percent and 87 percent, respectively. Poor propagation and associated frequency changes were responsible for 93 percent of the total transmit and receive path outages. The common carrier failure on January 16 is discussed above.

#### KAUAI ISLAND

The GDA-58477 circuit had transmit and receive path reliabilities of 100 percent and 98 percent respectively. The receive path experienced an extensive outage of 13:12 hours duration January 6 due to faulty common carrier equipment at the site. A Hawaiian Telephone Company technician arrived at the site 13:05 hours after the outage was reported and restored service swiftly.

#### MADRID

Circuits DP-2, DP-3 and CP-5 achieved 98 percent reliability and DP-4 and DP-6 achieved 99 and 97 percent reliability respectively.

On January 14, a faulty coaxial cable in France interrupted both paths of DP-2, DP-4, DP-5, DP-6 for 1:45 hours, and DP-3 for 1:15 hours. A second cable trouble the same day interrupted the transmit path of DP-2, DP-4, DP-5, and DP-6 for 7:24 hours, and DP-6 for an additional 6:00 hours on January 15. On January 9, the receive path of DP-6 was interrupted for 3:01 hours due to a carrier failure between London and Madrid and DP-5 was interrupted on the receive path January 14 for 2:26 hours due to a carrier group failure between Paris and Madrid. Circuit DP-2 was interrupted on the receive path for 4:50 hours due to line equipment trouble at Madrid on January 19/20. A 2:18 hours interruption to both paths of DP-6, due to a carrier super group failure between Perpignan and Paris, France, occurred on January 21. On January 25, an undetermined outage at Barcelona on DP-3 affected the transmit path for 1:40 hours and the receive path for 2:17 hours, whereas a super group carrier failure between London and Paris interrupted the transmit path of DP-6 for 1:00 hour the same date. A cable failure between Madrid and the site interrupted both paths of DP-2 and DP-3 for 2:40 hours and 4:58 hours, respectively, on January 26.

#### PASADENA

Circuit NSA-3653 achieved a reliability of 95 percent on both paths. The transmit path was interrupted for 3:20 hours on January 9 due to a common carrier failure between WUT Washington and Los Angeles. A microwave system failure on January 16 at Richeau Hills, Wyoming caused an interruption of 1:17 hours on the transmit path. On January 16/17, both paths were initially interrupted for 1:15 hours because the circuit failed to meet data specifications and was released for voice operations for 16:51 hours on January 17. After this, the circuit was returned for use in the data mode, still failing to meet data specifications. After an additional 28:24 hours of interruptions on January 17/18, the circuit was finally restored by WUT performing complete realignment of both paths. An additional bidirectional interruption of 4:39 hours occurred on January 31 caused by a faulty microwave channel between Sacramento and Pasadena.

The reliability of circuit NSA-3654 was 99 percent on the transmit path and 94 percent on the receive path. The microwave failure at Richeau Hills on January 16 affected the transmit path for 1;16 hours. A notable common carrier interruption on the receive path began on January 16 when line troubles between Washington and St. Louis, Missouri affected data operation for 15 minutes. GSFC then accepted the circuit for 12;15 hours of voice use after which it was returned to data use, still failing to meet specifications. After an additional 38;05 hours of outage on the receive path between January 17 and 19 and 2;20 hours on the transmit path on January 19 the common carrier restored the circuit to specifications. An additional interruption, for 3;09 hours on both paths, was due to a faulty amplifier at WUT Los Angeles on January 31.

#### POINT ARGUELLO/POINT MUGU

Circuit GP-58405 achieved 94 percent reliability on both paths. Heavy storms in the area causing wet cables resulted in a 12;50 hours common carrier failure to both paths between Surf, California and the site on January 25/26.

#### ROSMAN

Circuits GDA-58152, -58448 and -58616 were 98 percent reliable on both paths while GDA-58437 was 95 percent. On January 27, a common carrier failure between Rosman and Asheville, North Carolina affected both paths of all four circuits. This outage, due to burned resistors, interrupted the circuits for 12;03 hours. A defective ringer at the site on January 7 interrupted both paths of circuits GDA-58152, -58437 and -58448 for 1;00 hour. Other interruptions affecting individual circuits are discussed in the following paragraphs.

In addition to the outages listed above, circuit GDA-58152 had one significant common carrier interruption. Both paths were interrupted on January 11 for 1;20 hours when the circuit failed to meet 4A specifications on frequency delay.

Circuit GDA-58437 had an interruption on both paths of 24;00 hours on January 9/10 caused by a fault in a 4-wire bay at the site.

In addition to the outages listed above, circuit GDA-58448 encountered two other significant common carrier interruptions. The first, affecting the receive path for 1;33 hours on January 8, occurred when ATT changed cable pairs between Greenbelt and Huntsville, Alabama. The second, for 2;00 hours on January 27, was due to undetermined trouble in the Rosman area and affected both paths.

#### TANANARIVE

Circuit LTAN-4 achieved 90 percent reliability on both paths. A bidirectional interruption of 26;16 hours occurred on January 3/4 due to a radio system equipment failure at Tananarive. On January 6, both paths were interrupted for 2;20 hours due to a site power failure; for 1;04 hours due to an equipment failure at Paris, France, and the transmit path was interrupted for 1;33 hours due to a VHF equipment failure at Tananarive. An interruption of undetermined nature affected both paths for 1;45 hours on January 13. Radio path outages accounted for 50 percent of the transmit path and 56 percent of the receive path failures.

## NASCOM NETWORK DATA CIRCUITS

### General

Reliability discussions related to the Voice/Data circuits are contained in the summaries, tables and graphs in the preceding section. Material in this section is confined to the analysis of High-Speed and Wideband Data circuits.

On January 26, High-Speed circuit GDA-58451 from GSFC to Bermuda via New York was discontinued and circuit GDA-58512, from GSFC to Bermuda via Miami, was accepted as a replacement. Three additional High-Speed circuits and one additional Wideband circuit are being reported on in this section beginning this month. The High-Speed circuits are GD-58576 to Cape Kennedy and MW-02201 and MW-02202 between Pasadena and Goldstone, California. The additional Wideband circuit is TVS-7 receive-only from Rosman, North Carolina to GSFC.

### High-Speed Circuits

During 30,000 hours of scheduled operation, the NASCOM High-Speed Data circuits experienced 319 interruptions for a total outage of 191:12 hours. Interface circuits to Canberra, GDA-58504 and -58531, were affected by one interruption to Canberra 418 CP operation and 35 interruptions to GSFC-494 CP operation. The interface circuits to London, GDA-58447 and NSA-3651, were affected by the 35 interruptions to GSFC-494 CP operation. The other categories in which outages occurred were No Trouble Found, Common Carrier and Equipment Adjustment.

Common Carrier total outage increased from 72:54 hours to 141:48 hours while the associated total interruptions decreased from 32 to 30. One interruption caused by equipment adjustment accounted for a 7:00 hour outage and in problems where no trouble was noted, a total of 4:07 hours resulted from three interruptions.

Three circuits failed to achieve the reliability minimum established for their respective transmission modes by paragraph 2.3.2 of part VII of the NASCOM Data Systems Development Plan. These circuits are GD-58576 to Cape Kennedy, NSA-3651 to London and MW-02201 from Pasadena to Goldstone, California.

#### CAPE KENNEDY

Circuit GD-58576 achieved a transmit path reliability of 100 percent and a receive path reliability of 99 percent. The only significant interruption affected the receive path for 8:45 hours on January 5/6 and was due to a faulty data modem at Cape Kennedy.

#### LONDON

The transmit path, receive path and combined circuit reliability of NSA-3651 were coincident at 93 percent. Common carrier outage totaled 48:43 hours for the transmit path and 49:53 hours for the receive path. The majority of the common carrier total outage on each path occurred between January 10 and 13 when the receive path was interrupted twice and the transmit path three times. On January 10, these outages began



when the receive path did not meet required specifications. RCA New York and IMCA London conducted tests and, on January 12 after 41:20 hours, the receive path was restored to specifications when RCA changed lines between White Plains, New York and Sydney Mines, Nova Scotia. During this interval of receive path outage, the transmit path was interrupted twice, on January 11 for a total of 14:30 hours, for common carrier maintenance between RCA New York and London. On January 12/13, the transmit path was interrupted for 26:40 hours due to common carrier maintenance while the receive path was interrupted on January 13 for 6:00 hours due to common carrier maintenance. Both paths were restored on January 13.

Other significant interruptions occurred, on January 14, when both paths encountered an outage of 2:25 hours due to a patch inadvertently removed between White Plains and Sydney Mines and, on January 9/10, when the transmit path was interrupted for 3:48 hours by low levels from RCA New York to London.

#### PASADENA/GOLDSTONE

The transmit and receive path reliabilities of circuit MW-02201 were 99 and 100 percent, respectively, with only one interruption on each path. The transmit path was interrupted for 7:00 hours on January 27 due to equipment adjustment at the Goldstone Tracking Station. On January 24, an undetermined trouble caused an outage of 2:35 hours on the receive path.

### Wideband Circuits

Wideband circuits encountered 153 interruptions for a total outage of 132:14 hours during 9,350 hours of scheduled operation. Of the 153 interruptions, a total of 140 resulted from 35 unscheduled CP failures which affected each path of circuits GW-58526 and GW-58527. The associated total outage to both circuits was 14:16 hours. The remaining 13 interruptions were a result of 12 common carrier troubles and one failure where no cause was determined. Total outage associated with these were 117:48 hours and ten minutes respectively.

The common carrier outage represented 89 percent of the total outage. Of the 12 common carrier interruptions, five were the primary cause of two circuits not attaining their minimum reliability standard. These circuits are GW-58527 to Houston and TVS-7 to Rosman, North Carolina.

#### HOUSTON

Circuit GW-58526 achieved a reliability of 99 percent caused primarily by accumulated CP interruptions.

Circuit GW-58527 achieved a reliability of 93 percent during 696 hours of scheduled operation. Between January 21 and 23, both paths were interrupted for 51:50 hours due to a defective filter at Jasper, Alabama. ATT informed GSFC personnel that the replacement filter had to be custom-made and this requirement contributed to the length of the outage.

#### ROSMAN

Wideband television circuit TVS-7 achieved a reliability of 99 percent during 735 hours of scheduled operation. Three significant common carrier interruptions provided the total outage of 9:29 hours experienced by this receive-only circuit. The longest interruption, for 6:15 hours, was caused by equipment trouble at Rosman on January 17. The remaining interruptions were 1:59 hours on January 18 due to equipment adjustment by ATT and 1:15 hours on January 8 due to ATT equipment trouble at GSFC.

TABLE 10  
NASCOM Network Data Circuit Outage, Scheduled Hours, and Reliability

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
HIGH-SPEED CIRCUITS															
Bermuda	GDA-58440-T	-	-	-	-	-	-	-	-	-	-	-	-	576	100
	-58440-R	-	-	-	-	-	-	-	-	-	-	-	-	576	100
	-58441-T	-	6:00	-	-	-	-	-	-	-	-	-	6:00	576	99
	-58441-R	-	6:00	-	-	-	-	-	-	-	-	-	6:00	576	99
	-58450-T	-	-	-	-	-	-	-	-	-	-	-	-	575	100
Canberra	-58450-R	-	-	-	-	-	-	-	-	-	-	-	-	575	100
	-58451-T	-	-	-	-	-	-	-	-	-	-	-	-	378	100
	-58451-R	-	-	-	-	-	-	-	-	-	-	-	-	378	100
	-58512-T	-	-	-	-	-	-	-	-	-	-	-	-	84	100
	-58512-R	-	-	-	-	-	-	-	-	-	-	-	-	84	100
Cape Kennedy	GDA-58504-T	-	2:05	-	-	-	3:49	-	-	-	-	-	5:54	743	99
	-58504-R	-	-	-	-	-	3:49	-	-	-	-	-	3:49	743	99
	-58531-T	-	2:56	-	-	-	3:49	-	-	-	-	-	6:45	744	99
	-58531-R	-	2:20	-	-	-	3:49	-	-	-	-	-	6:09	744	99
	GD-58418-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Cape Kennedy/ Houston	-58418-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58419-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58419-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58576-T	-	-	-	-	-	-	-	-	-	-	-	-	740	100
	-58576-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Cape Kennedy/ Houston	GDA-58538-T	-	4:45	-	-	8:45	-	-	-	-	-	-	8:45	744	99
	-58538-R	-	-	-	-	-	-	-	-	-	-	-	4:45	744	99
	-58543-T	-	4:45	-	-	-	-	-	-	-	-	-	-	744	100
	-58543-R	-	-	-	-	-	-	-	-	-	-	-	4:45	744	99
	GD-8290-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Cape Kennedy/ Houston	-8290-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-8291-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-8291-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-8292-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-8292-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
Cape Kennedy/ Houston	-8293-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-8293-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100

TABLE 10 (Continued)

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL LOST TIME	SCHED OPER. HOURS	RELIA- BILITY
Gilmore Creek	GD-58430-T	-	1:00	-	-	-	-	-	-	-	-	-	1:00	744	100
	-58430-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GDA-58161-T	-	3:03	-	-	-	-	-	1	-	-	-	3:03	744	100
	-58161-R	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	GDA-58447-T	-	7:48	-	-	-	3:34	-	-	-	-	-	11:22	744	98
London	-58447-R	:02	2:30	-	-	-	3:34	-	-	-	-	-	6:06	744	99
	NSA-3651-T	-	48:43	-	-	-	3:34	-	-	-	-	-	52:17	744	93
	-3651-R	-	49:53	-	-	-	3:34	-	-	-	-	-	53:27	744	93
Pasadena/ Goldstone	MW-02201-T	-	-	-	7:00	-	-	-	-	-	-	-	7:00	744	99
	-02201-R	2:35	-	-	-	-	-	-	-	-	-	-	2:35	744	100
	-02202-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
Wallops Island	-02202-R	1:30	-	-	-	-	-	-	-	-	-	-	1:30	744	100
	GDA-58540-T	-	-	-	-	-	-	-	-	-	-	-	-	179	100
	-58540-R	-	-	-	-	-	-	-	-	-	-	-	-	179	100
	-58541-T	-	-	-	-	-	-	-	-	-	-	-	-	179	100
	-58541-R	-	-	-	-	-	-	-	-	-	-	-	-	179	100
High-Speed Totals		4:07	141:48	-	7:00	8:45	29:32	-	-	-	-	-	191:12	30,000	99
WIDEBAND CIRCUITS															
Cape Kennedy/ Houston	GW-58760-T	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	-58760-R	-	-	-	-	-	-	-	-	-	-	-	-	696	100
	GW-52348-T	:10	3:16	-	-	-	-	-	-	-	-	-	3:26	744	100
Gilmore Creek	-52348-R	-	:36	-	-	-	-	-	-	-	-	-	:36	744	100
	GW-58526-T	-	:04	-	-	-	3:34	-	-	-	-	-	3:38	691	99
	-58526-R	-	-	-	-	-	3:34	-	-	-	-	-	3:34	691	99
Houston	-58527-T	-	51:50	-	-	-	3:34	-	-	-	-	-	55:24	691	93
	-58527-R	-	51:50	-	-	-	3:34	-	-	-	-	-	55:24	691	93
	GW-52416-R	-	:43	-	-	-	-	-	-	-	-	-	:43	744	100
Rosman	-58173-T	-	-	-	-	-	-	-	-	-	-	-	-	744	100
	-58174-R	-	-	-	-	-	-	-	-	-	-	-	-	742	100
	N-58699-R	-	-	-	-	-	-	-	-	-	-	-	-	741	100
Wideband Totals		:10	117:48	-	-	-	14:16	-	-	-	-	-	9:29	735	99
Wideband Totals													132:14	9,350	99

TABLE 11  
NASCOM Network Data Circuit Interruptions

STATION	CIRCUIT	NO TRBL FND	COM CAR	OPR ERR	EQUIP ADJ	EQUIP FAIL	CP FAIL	POOR PROP	INTER- FER- ENCE	FREQ CHG	MAINT	PWR FAIL	TOTAL	AVG DURA- TION
HIGH-SPEED CIRCUITS														
Bermuda	GDA-58440-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58440-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58441-T	-	1	-	-	-	-	-	-	-	-	-	1	6:00
	-58441-R	-	1	-	-	-	-	-	-	-	-	-	1	6:00
	-58450-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58450-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58451-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58451-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58512-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58512-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58504-T	-	1	-	-	-	36	-	-	-	-	-	37	:10
	-58504-R	-	-	-	-	-	36	-	-	-	-	-	36	:06
Canberra	-58531-T	-	2	-	-	-	36	-	-	-	-	-	38	:11
	-58531-R	-	4	-	-	-	36	-	-	-	-	-	40	:09
	GD-58418-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58418-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Cape Kennedy	-58419-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58419-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58576-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-58576-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	GDA-58538-T	-	1	-	-	1	-	-	-	-	-	-	1	8:45
	-58538-R	-	-	-	-	-	-	-	-	-	-	-	1	4:45
	-58543-T	-	1	-	-	-	-	-	-	-	-	-	-	-
	-58543-R	-	-	-	-	-	-	-	-	-	-	-	1	4:45
	GD-8290-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-8290-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-8291-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-8291-R	-	-	-	-	-	-	-	-	-	-	-	-	-
Cape Kennedy/Houston	-8292-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-8292-R	-	-	-	-	-	-	-	-	-	-	-	-	-
	-8293-T	-	-	-	-	-	-	-	-	-	-	-	-	-
	-8293-R	-	-	-	-	-	-	-	-	-	-	-	-	-